

Installation Manual



Profile

PDR200

Video File Server

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Safety Summaries

General Safety Summary

Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it.

Only qualified personnel should perform service procedures.

While using this product, you may need to access other parts of the system. Read the *General Safety summary* in other system manuals for warnings and cautions related to operating the system.

Injury Precautions

Use Proper Power Cord	To avoid fire hazard, use only the power cord specified for this product.
Ground the Product	This product is grounded through the grounding conductor of the power cord. To avoid electric shock, the grounding conductor must be connected to earth ground. Before making connections to the input or output terminals of the product, ensure that the product is properly grounded.
Do Not Operate Without Covers	To avoid electric shock or fire hazard, do not operate this product with covers or panels removed.
Use Proper Fuse	To avoid fire hazard, use only the fuse type and rating specified for this product.
Do Not operate in Wet/Damp Conditions	To avoid electric shock, do not operate this product in wet or damp conditions.
Do Not Operate in an Explosive Atmosphere	To avoid injury or fire hazard, do not operate this product in an explosive atmosphere.
Avoid Exposed Circuitry	To avoid injury, remove jewelry such as rings, watches, and other metallic objects. Do not touch exposed connections and components when power is present.

Product Damage Precautions

Use Proper Power Source	Do not operate this product from a power source that applies more than the voltage specified.
Provide Proper Ventilation	To prevent product overheating, provide proper ventilation.
Do Not Operate With Suspected Failures	If you suspect there is damage to this product, have it inspected by qualified service personnel.

Safety Terms and Symbols

Terms in This Manual

These terms may appear in this manual:



WARNING: Warning statements identify conditions or practices that can result in personal injury or loss of life.



CAUTION: Caution statements identify conditions or practices that can result in damage to the equipment or other property.

Terms on the Product

These terms may appear on the product:



DANGER indicates a personal injury hazard immediately accessible as one reads the marking.



WARNING indicates a personal injury hazard not immediately accessible as you read the marking.



CAUTION indicates a hazard to property including the product.

Symbols on the Product

The following symbols may appear on the product:



DANGER high voltage



Protective ground (earth) terminal



ATTENTION – refer to manual

Regulatory Summaries

Certifications and Compliances

Canadian Certified Power Cords

Canadian approval includes the products and power cords appropriate for use in the North America power network. All other power cords supplied are approved for the country of use.

FCC Emission Control

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Changes or modifications not expressly approved by Tektronix can affect emission compliance and could void the user's authority to operate this equipment.

Canadian EMC Notice of Compliance

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

Canadian Certified AC Adapter

Canadian approval includes the AC adapters appropriate for use in the North America power network. All other AC adapters supplied are approved for the country of use.

EN55022 Class A Warning

For products that comply with Class A. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Laser Compliance

Laser Safety Requirements

The device used in this product is a Class 1 certified laser product. Operating this product outside specifications or altering from its original design may result in hazardous radiation exposure, and may be considered an act of modifying or new manufacturing of a laser product under US regulations contained in 21CFR Chapter 1, subchapter J or CENELEC regulations in HD 482 S1. People performing such an act are required by law to recertify and reidentify this product in accordance with provisions of 21CFR subchapter J for distribution within the U.S.A., and in accordance with CENELEC HD 482 S1 for distribution within countries using the IEC 825 standard.

Laser Safety

Laser safety in the United States is regulated by the Center for Devices and Radiological Health (CDRH). The laser safety regulations are published in the “Laser Product Performance Standard,” Code of Federal Regulation (CFR), Title 21, Subchapter J.

The International Electrotechnical Commission (IEC) Standard 825, “Radiation of Laser Products, Equipment Classification, Requirements and User’s Guide,” governs laser products outside the United States. Europe and member nations of the European Free Trade Association fall under the jurisdiction of the Comité Européen de Normalization Electrotechnique (CENELEC).

For the CDRH: the radiant power is detected through a 7 mm aperture at a distance of 200mm from the source focused through a lens with a focal length of 100 mm.

For IEC compliance: the radiant power is detected through a 7 mm aperture at a distance of 100mm from the source focused through a lens with a focal length of 100 mm.

FCC Emission Limits

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesirable operation. This device has been tested and found to comply with FCC Part 15 Class B limits for a digital device when tested with a representative laser-based fiber optical system that complies with ANSI X3T11 Fiber Channel Standard.

Certification

Category	Standard
Safety	<i>Designed/tested for compliance with:</i> UL1950 - Safety of Information Technology Equipment, including Electrical Business Equipment (Second edition, 1993) IEC 950 - Safety of Information Technology Equipment, including Electrical Business Equipment (Second edition, 1991) CAN/CSA C22.2, No. 950-93 - Safety of Information Technology Equipment, including Electrical Business Equipment EN60950 - Safety of Information Technology Equipment, including Electrical Business Equipment

Introduction

Scope

This is the Installation manual for the Tektronix Professional Disk Recorder Video File Server, model 200 (PDR200). It is part of a set of manuals provided to support installation and operation of the PDR200 (Figure 1-1). The manual set consists of the User Manual(s), Software Release Notes for the current version of Profile software, and this Installation manual. Other manuals, although not part of the set, may be included with these manuals.

The Installation manual consists of:

- An overview of the PDR200.
- Installation procedures.
- System start-up and setup.

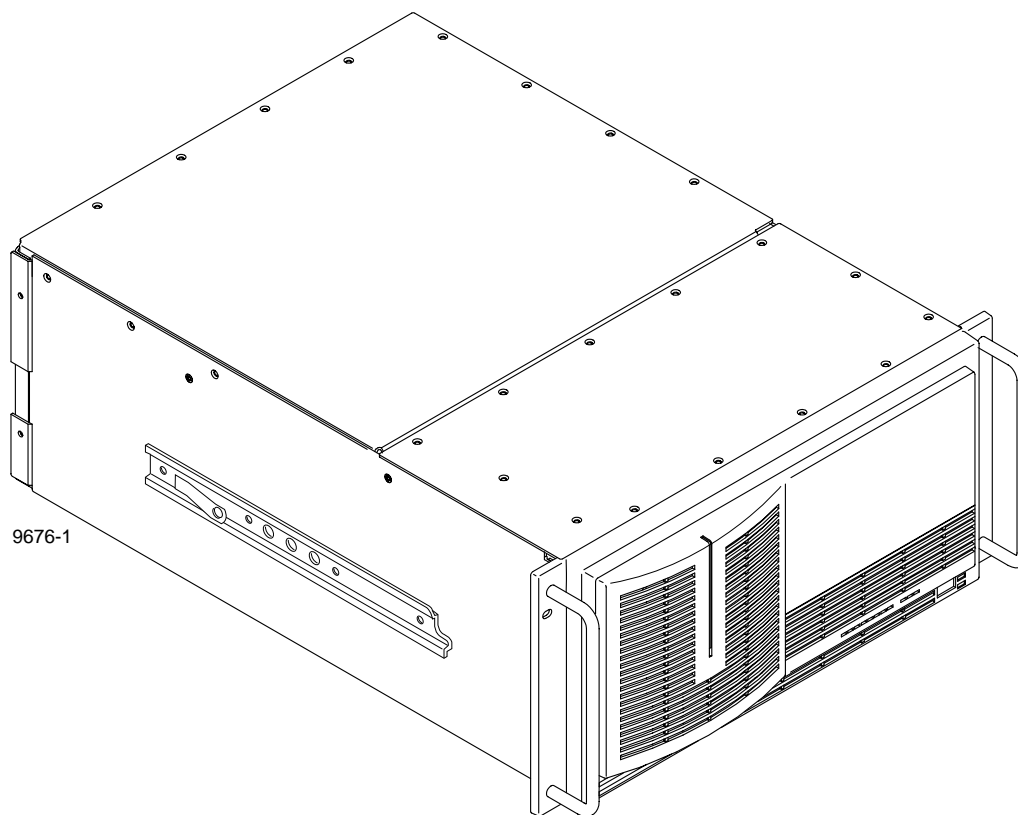


Figure 1-1. The PDR 200

Related Documentation

Profile Family User Manual

PDR200 Service Manual

Profile Release Notes

PDX208 Disk Expansion Chassis Instruction Manual

Window NT Instruction Manual

Organization of the Manual

The Installation manual is divided into the chapters identified and described below.

Chapter 1 - Introduction: This chapter describes the contents of the manual and the PDR 200 system. It includes configuration information and Tektronix Product Support contacts.

Chapter 2 - Mechanical Installation: This chapter describes the physical installation of the system up to initial power-on.

Chapter 3 - Applying Power: This chapter consists of procedures to turn system power On and Off, to set up the system, and to verify correct installation of the PDR200.

Chapter 4 - Networking Your Profile: This chapter describes the Ethernet and Fibre Channel networking used in the PDR200, including connection and set up.

Appendix A - Specifications: This appendix consists of physical and electrical specifications and environmental criteria.

Appendix B - Connector Pin-outs: This appendix identifies certain connectors and the signals present and the pins of those connectors.

Product Description

The PDR 200 is a disk-based video file server with enhanced record and playback quality, and rapid storage/retrieval capabilities. In addition to the advantage of not having to load tape as with VTRs, the PDR200 occupies less rack space and is fully computer controlled.

The PDR200 is a flexible system which starts with six base configurations: three are for 2-channel Profiles and three are for 4-channel Profiles. Each configuration is then tailored, through factory installed options, to meet your site-specific needs. Many options may be easily added to your PDR 200 as your needs change and expand. For information on adding options, contact your Tektronix representative.

There are two basic versions of the PDR200. One is a 2-channel version with a single SCSI bus and the other is a 4-channel version with two SCSI buses. The primary difference between the two is that the 4-channel PDR200 has twice the number of CODECs as the 2-channel PDR200. (CODEC refers to the Coder/Decoder link which compresses digital video for disk storage and decompresses it for output.) Another difference is storage, where both internal and external storage is optional

The PDR 200 is mounted on rack slides for installation in either a standard or "TELCO" rack. All connections to the PDR200 are on the rear panel (see Section 2, *Mechanical Installation*). Also see Appendix A, *Specifications*, for physical and electrical specifications and environmental criteria

Product Features

Record/playback and storage/retrieval applications for the PDR 200 run in the Windows NT™ environment. The Windows NT operating software is loaded on the dedicated system hard disk, which is also used for application storage. Control is via an internal Pentium-based CPU board.

Other features include:

- An SVGA circuit board supports an optional SVGA monitor.
- Control interfaces for:
 - RS-232 (two rear panel ports)
 - RS-422 (eight ports through a single rear panel connector)
 - Keyboard and mouse
- Front panel controls and indicators.

Front Panel Controls and Indicators

The PDR 200 front panel, shown in Figure 1-2, consists of the controls and indicators keyed to Figure 1-2 and briefly described below.

- ❶ Floppy Disk Drive access for loading operating system software or specific application software. The drive accepts standard 3-1/2-inch double density (720KB) or high density (1.44MB) floppy diskettes.
- ❷ Green LED indicator lighted when both the power switch on the rear panel and the one on the front panel (see ❺ below) are On.
- ❸ Eight green LED indicators, labeled **DISK ACCESS**, show disk activity. They are mapped right to left to the physical location of each hard disk drive in the chassis and flash on when activity occurs on the associated disk. With a 2-channel PDR 200 (i.e., one with only four disk drives), every other LED beginning from the right will be enabled. An LED that never flashes on or remains on may indicate a problem with the associated disk. If you do not have any internal disk storage, which is an option, these LEDs remain off.
- ❹ Three red Trouble LED indicators. When lighted they provide warnings of (from the right):
OVER TEMP (internal overheating);
FAN FAULT (failure of one or more fans)
SYS FAULT (system failure)
- ❺ The **STANDBY/ON** switch provides system On/Off control (the same as pressing the rear panel On/Off switch).

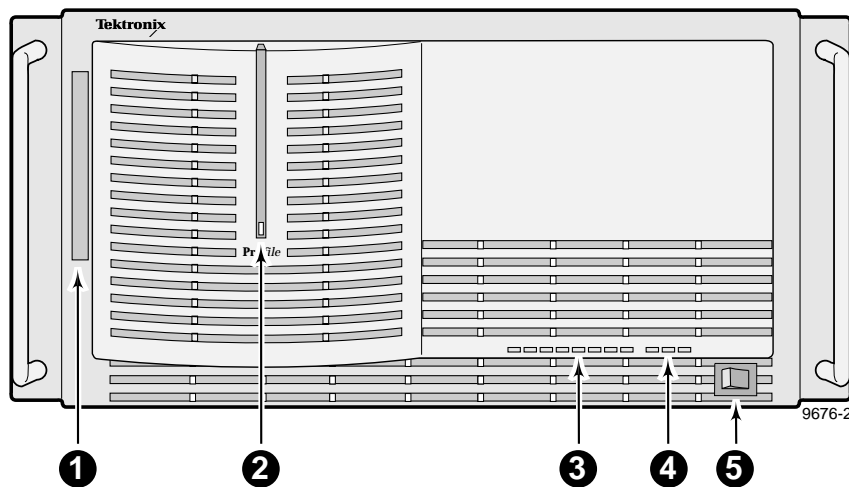


Figure 1-2. PDR200 Front Panel

Accessories

There are two types of accessories for the PDR 200 Video File Server: Standard and Optional. Standard Accessories are those items required to install and operate the PDR 200. They are shipped with your Profile. Optional accessories expand PDR 200 capabilities, simplify installation, or aid in servicing. Optional accessories are available through Tektronix.

Standard Accessories

PDR 200 shipment includes the following items:

- 1 Manual, User (Tektronix part number 070-9955-XX)
- 1 Manual, Installation (Tektronix part number 070-9676-XX)
- Software Package which includes the latest version of Profile application software and an Emergency Repair diskette.
- 1 Windows NT instruction book (Tektronix part number 063-2284-XX)
- 1 Keyboard (Tektronix part number 119-4254-XX)
- 1 Mouse (Tektronix part number 119-4330-XX)
- 2 Packages (12 pieces) EMI Suppression Gaskets for BNC Connectors (Tektronix part number 016-1448-XX)
- 1 Cable Assembly, Power (161-0216-00 for US and Japan; 161-0066-09 for Europe; 161-0066-10 for the United Kingdom; or 161-0066-11 for Australia)
- 1 SCSI Terminator (011-0166-00)
- 1 XLR216 Digital Audio Breakout Panel
- 1 RS-422 Connector Panel
- 1 Set of rack-mounting slides

Optional Accessories

If ordered, Tektronix provides the optional accessories listed below. Contact your nearest field office or distributor for more information.

- LAN Hub (for Ethernet connections)
- Video Hub (for Fibre Channel networking) with an Optical Media Interface Adapter
- SVGA Monitor
- Service Manual (070-9675-XX)
- PAC208/216 Analog/Digital Profile Audio Chassis
- PAC216 Audio Expansion Chassis
- PDX208 Disk Drive Expansion Chassis
- 1 RS-422 Control panel, with interconnecting cable (039-0028-XX)
- Additional Hard Disk Drives for the PDR 200 (or the PDX208)
- Eight-connector DB25-XLR breakout cable for longitudinal time code I/O (Tektronix part number 174-3249-XX)
- Eight-connector breakout cable, with DB25 connector (Tektronix part number 174-3481-XX)

Configurations

The PDR200 is available in six factory installed base configurations. Table 1-1 lists the configurations. In the table, note the following:

- Factory installable option boards are shaded.
- In the configurations identified at the top of the table:
 - **PDR202A** indicates a 2-channel Profile with analog composite video.
 - **PDR204A** indicates a 4-channel Profile with analog composite video.
 - **PDR202C** indicates a 2-channel Profile with analog component video.
 - **PDR204C** indicates a 4-channel Profile with analog component video.
 - **PDR202D** indicates a 2-channel Profile with digital video.
 - **PDR204D** indicates a 4-channel Profile with digital video.

Table 1-1. Factory Standard Configurations with Installable Options

Slot	PDR202A	PDR204A	PDR202C	PDR204C	PDR202D	PDR204D
1	System CPU	System CPU	System CPU	System CPU	System CPU	System CPU
2	System SVGA	System SVGA	System SVGA	System SVGA	System SVGA	System SVGA
3	System LAN*	System LAN*	System LAN*	System LAN*	System LAN*	System LAN*
4	System SCSI	System SCSI	System SCSI	System SCSI	System SCSI	System SCSI
5	Decoder	Decoder	Decoder	Decoder	Decoder	Decoder
6	Video In Analog Composite	Video In Analog Composite	Video In Analog Composite	Video In Analog Composite	Video In Analog Composite	Video In Analog Composite
7	Video Mix Effects	Video Mix Effects	Video Mix Effects	Video In Analog Component	Video Mix Effects	Video Mix Effects
8	Fibre Channel	Fibre Channel	Fibre Channel	Fibre Channel	Fibre Channel	Fibre Channel
9	Disk Recorder Master	Disk Recorder Master	Disk Recorder Master	Disk Recorder Master	Disk Recorder Master	Disk Recorder Master
10		Disk Recorder Slave		Disk Recorder Slave		Disk Recorder Slave
11	Video I/O Serial Digital Component	Video I/O Serial Digital Component		Video In Analog Component	Video In Analog Component	Video In Analog Component
12	Video Out Analog Composite	Video Out Analog Composite	Video Out Analog Composite	Video Out Analog Composite	Video Out Analog Composite	Video Out Analog Composite
13	Audio I/O Digital AES/EBU	Audio I/O Digital AES/EBU	Audio I/O Digital AES/EBU	Audio I/O Digital AES/EBU	Audio I/O Digital AES/EBU	Audio I/O Digital AES/EBU
14	Decoder	Decoder	Video In Analog Component	Video In Analog Component	Video I/O Serial Digital Component	Video I/O Serial Digital Component
15	Video In Analog Composite	Video In Analog Composite	Video In Analog Component	Video In Analog Component		Video I/O Serial Digital Component
16	Ref Gen	Ref Gen	Ref Gen	Ref Gen	Ref Gen	Ref Gen
17	RS422	RS422	RS422	RS422	RS422	RS422

* The LAN board may be a separate option or part of the Fibre Channel option.

Configuration Stickers

You may check/identify your configuration, including factory installed options, by looking at the bottom panel just below the rear panel board connectors. A Configuration sticker, which identifies the board installed in the slot above the sticker, has been attached to assist you in making connections to your Profile. Figure 1-3 shows the location of the configuration stickers.

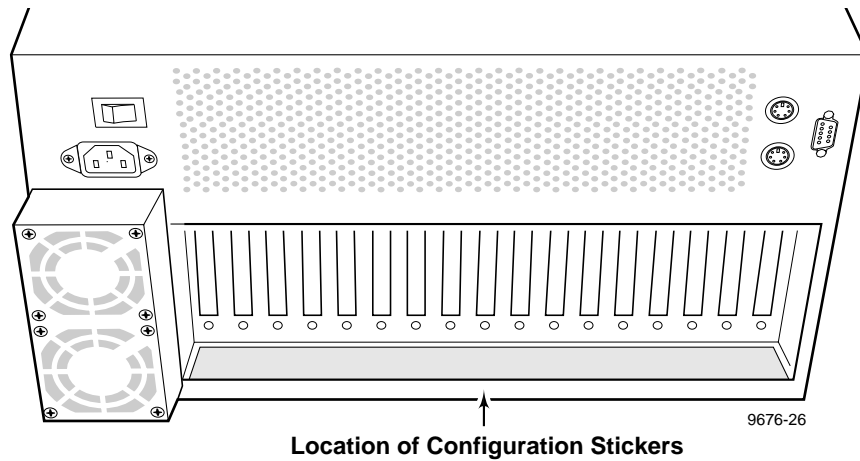


Figure 1-3. Configuration Stickers Locations

Tektronix Product Support

You can get technical assistance, check on the status of problems, or report new problems by contacting our Product Support Group.

United States and Canada

Monday–Friday 5:30AM–5:00PM Pacific Time
(800) 547-8949

Europe

Monday–Friday 9:00AM–5:30PM

Austria	222-799-3535	Netherlands	010-495-4255
Belgium	02-714-3401	Norway	22-83-85-69
Denmark	3543-5259	Spain	91-564-4692
Finland	161-691-98559	Sweden	08-679-8419
Germany	069-935-25001	Switzerland	041-210-6009
Italy	44-1908-681-706	United Kingdom	01908-681-703
Luxembourg	400-848	Other	44-1908-681-703

Email: EuroProfile@tek.com

Asia and South America

Australia	61-2-888-7066	Korea	82-2-528-5299
Brazil	55-11-543-1911	Mexico	52-5-666-6333
Hong Kong	852-2585-6688	Singapore	65-356-3900
Japan	81-3-3448-3111	Taiwan	886-2-765-6362

World Wide

24-hour Emergency Hotline (503) 685-2345 (Contract and warranty customers)

World Wide Web <http://www.tek.com/Profile/Support>

FTP Site <ftp.tek.com> (IP address: 134.62.48.21)

Email ProfileSupport@tek.com

Users Group profile-users@tek.com

Mechanical Installation

This chapter describes the mechanical installation of your PDR 200 into an equipment rack and the connection of cables to the rear panel. The chapter includes examples of connections to peripheral equipment such as the PDX 208 storage expansion chassis, the PRS 200 RAID Storage chassis, LAN and Fibre Channel hubs. See the appropriate manuals for installation instructions for peripheral equipment. The information here covers:

- Mounting the PDR 200 and the Profile Audio Chassis (PAC 208/216) in the rack.
- Mounting the RS-422 Connector Panel, the XLR 216 panel (or the BN 216 panel), and the PAC 216 Audio Expansion panel.
- Making PDR 200 rear panel cable connections.
- Making other system connections.

Rack Mounting

The equipment for the PDR 200 system installs in a standard 19-inch equipment rack. Rack slide tracks shipped with the PDR 200 and the Profile Audio Chassis allow them to slide in and out without having to remove them from the rack. However, if the rack does not already have rack slides installed, or if the slides are not correctly positioned, you will have to use those shipped with the PDR 200.

When determining the location of the PDR 200 in the rack, bear in mind that the instrument with a full complement of disk drives weighs approximately 70 pounds. Observe the following warnings:



WARNING: To prevent injury, two people are required to lift the PDR 200. The PDR 200 is too heavy for one person to install in the rack.



WARNING: To prevent serious injury, insure that the rack is anchored to the floor so that it cannot tip over when the PDR 200 is extended out of the rack.

Mounting the Slide Tracks in the Rack

Figure 2-1 shows the components of a right-hand rack slide set. Note that the chassis sections are already attached to the PDR200 and PAC208/216. When mounting rack slides in the equipment rack, bear the following in mind:

- The PDR200 occupies 5 rack units (RUs).
- The PAC208/216 occupies 2 RUs

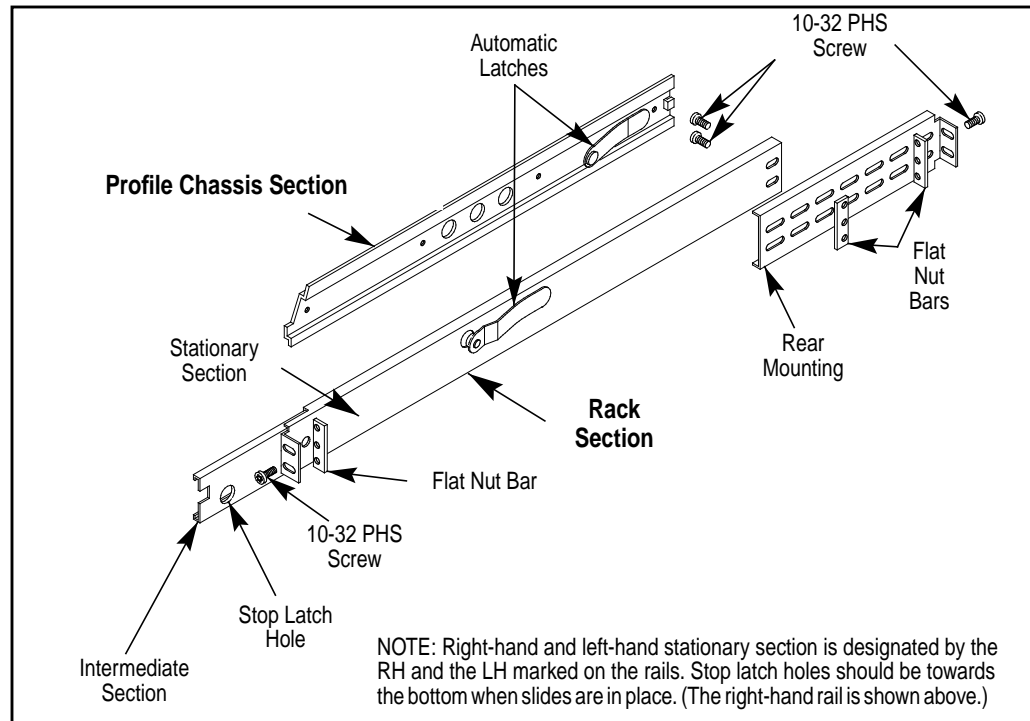


Figure 2-1. Rack Slide Set for Right Side of Profile and Rack

From Figure 2-2, choose the proper set of rail mounting holes on the rack. Notice that the hole spacing can vary with the rack type. When mounting the slides in racks with EIA spacing, make sure that the slides are attached to the 0.5-inch spaced holes.

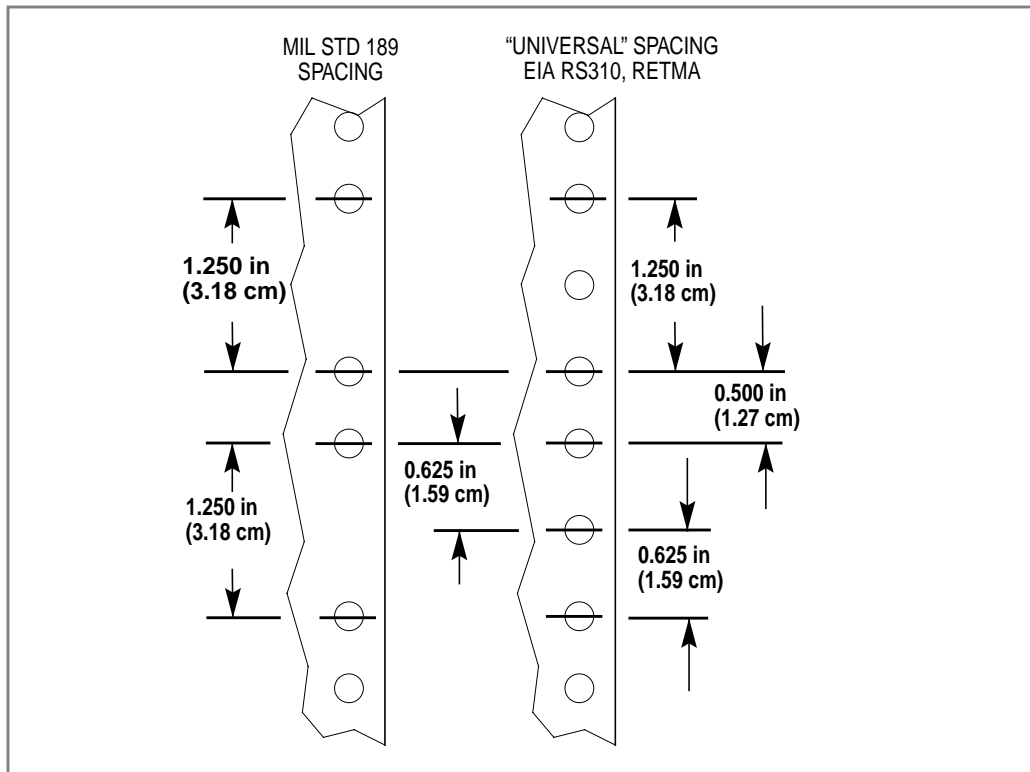


Figure 2-2. Spacing Specification for Mounting Holes in a Rack

Figures 2-3 and 2-4 show front and rear rail mounting details for both deep and shallow racks. Mount the rails using the enclosed hardware. Make sure the stationary sections are horizontally aligned and are level, as well as parallel to each other.

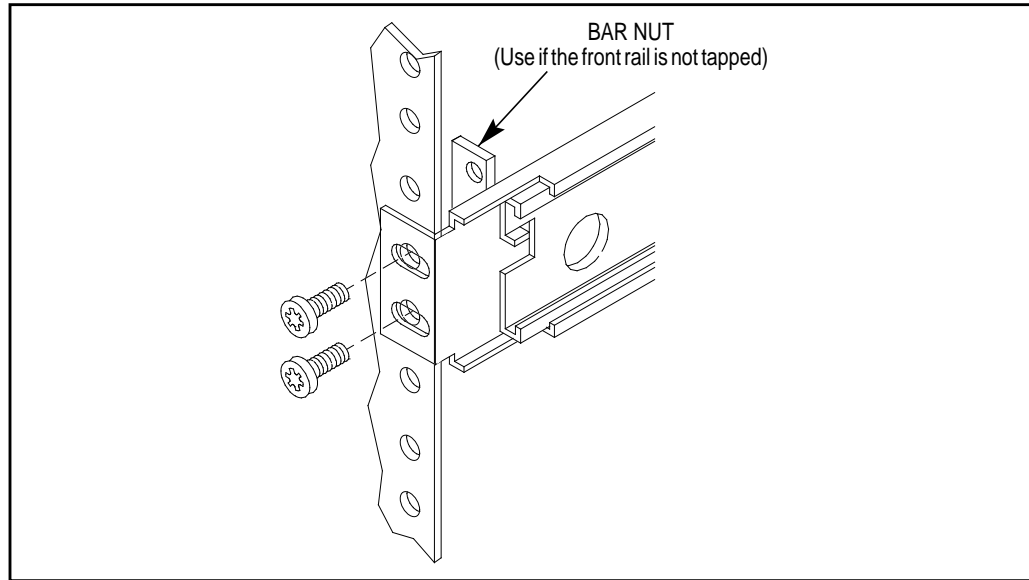


Figure 2-3. Front Rail Mounting Detail

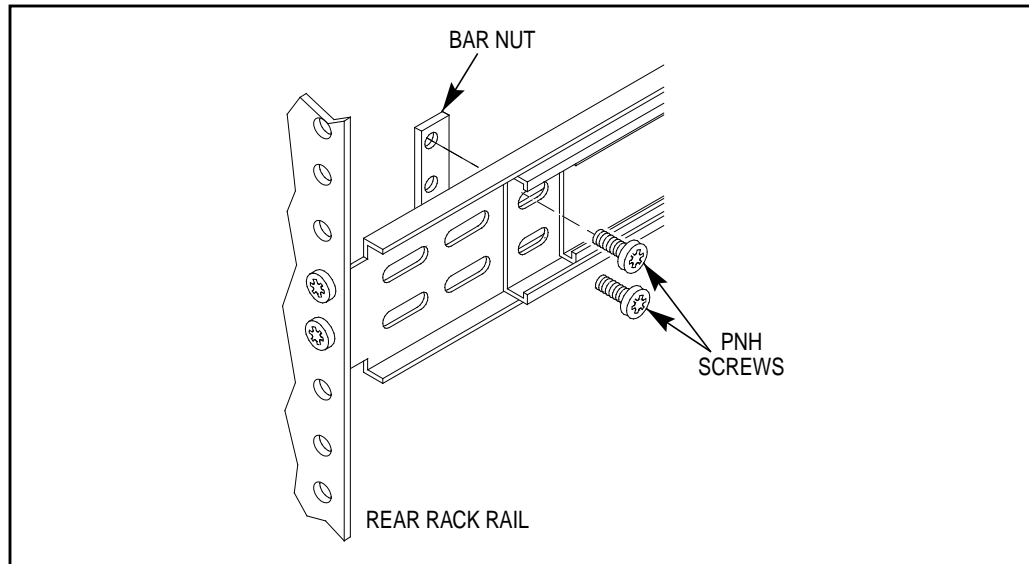


Figure 2-4. Rear rail Mounting Detail

Mounting the PDR200

In addition to room to make cable connections, the PDR 200 requires six inches (15.25 cm) of clearance behind the rear panel for connectors and cable bends. Insure adequate air flow around the chassis to provide sufficient cooling. (Operating ambient temperature will effect the amount of air circulation required to keep the PDR200 within its temperature limitations.)

1. Pull the slide-out track section to the fully extended position. See Figure 2-5.



WARNING: To prevent injury, two people are required to lift the PDR200. It is too heavy for one person to install in the rack.



WARNING: To prevent serious injury, insure that the rack is anchored to the floor so that it cannot tip over when the PDR200 is extended out of the rack.

2. Insert the ends of the chassis sections into the slide-out sections.
3. Push the chassis toward the rack until the chassis sections lock into the intermediate sections.
4. Press the stop latches in the intermediate sections and push the chassis toward the rack until the latches snap into their holes.

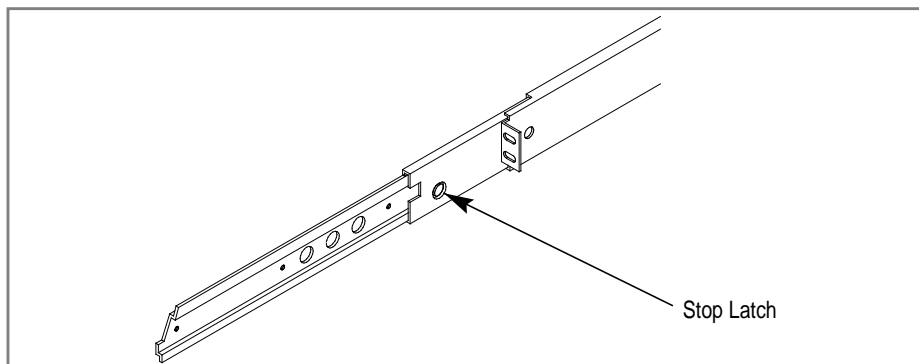


Figure 2-5. Rack Slide Stop Latch

5. Again, press the stop latches and push the cabinet fully into the rack.
6. Insert and tighten the front panel retaining screws.

Making Rack Slide Adjustments

After installation, binding may occur if the slide tracks are not properly adjusted. To adjust the tracks:

1. Slide the chassis out approximately 10 inches.
2. Slightly loosen the mounting screws holding the tracks to the front of the rails and allow the tracks to seek an unbound position.
3. Tighten the mounting screws and check the tracks for smooth operation by sliding the chassis in and out of the rack several times.
4. Tighten the front panel retaining screws once the cabinet is in place within the rack to complete the installation.

Mounting Panels

The panels listed below mount at the back of the rack with four pan head screws. These panels have no cooling or power requirements. Insure room to make cable connections and mount in any order which allows connection to the PDR200.

- The RS-422 Connector Panel is 1 RU high with the mounting holes spaced 1.250 inches (3.175 cm) apart.
- The XLR 216 (or BNC 216) is 2 RUs high with holes spaced 3.000 inches (7.62 cm) apart.
- The PAC 216 Audio Expansion panel is two RUs high with holes spaced 3.000 inches (7.62 cm) apart.

Making PDR 200 Rear Panel Connections

Because of the flexible configurations of the PDR 200, not all of the rear panel connections described here may apply to your Profile. The connections are described as though all factory installable options were in fact installed. As you go through these instructions, simply ignore a board you do not have installed. Note that any rear panel slot which does not have a board installed will have a blank cover over the rear panel slot.

NOTE: Insure that power switches of all equipment to be installed are in the Off (0) positions.

To insure compliance with EMI standards, all BNC cable connections require that an EMI suppression gasket be attached as shown in Figure 2-6. Your Profile shipment included a set of gaskets.

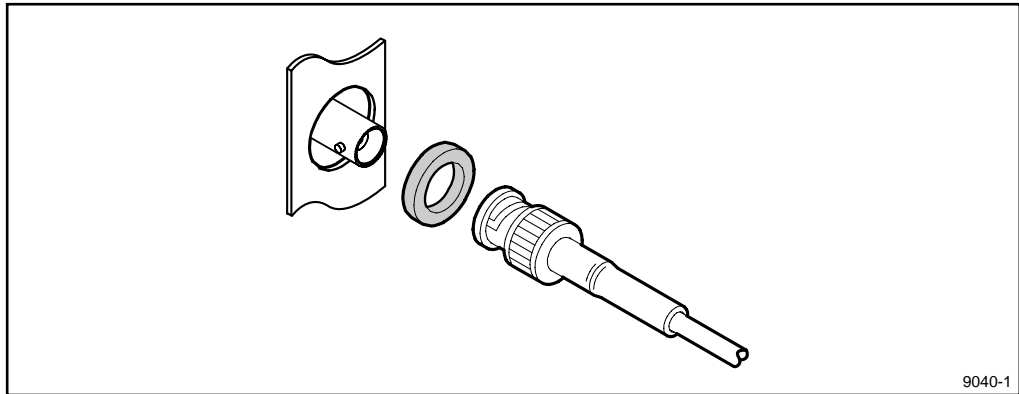


Figure 2-6. BNC Connection With EMI Gasket

The connections you will make are:

- Connecting the mouse and keyboard
- Connecting the monitor
- Connecting house reference
- Connecting video
- Connecting audio
- Connecting SCSI-2 devices
- Connecting networking devices
- Connecting power

Connecting the Mouse and Keyboard

The PDR200 provides two sets of connectors for the mouse and keyboard (see Figure 2-7). One set, labelled **Keyboard** and **Mouse**, is on the upper right corner of the rear panel and the other set resides on the Pentium-based System CPU board in board Slot J1, which is standard on all PDR200 configurations.

Tektronix recommends using the labelled connectors on the rear panel.

If using the set on the System CPU board, connect the Mouse cable to the bottom circular 6-pin connector and the Keyboard cable to the top circular 6-pin connector.

NOTE: Only one mouse and one keyboard can be connected to the PDR200 at the same time.

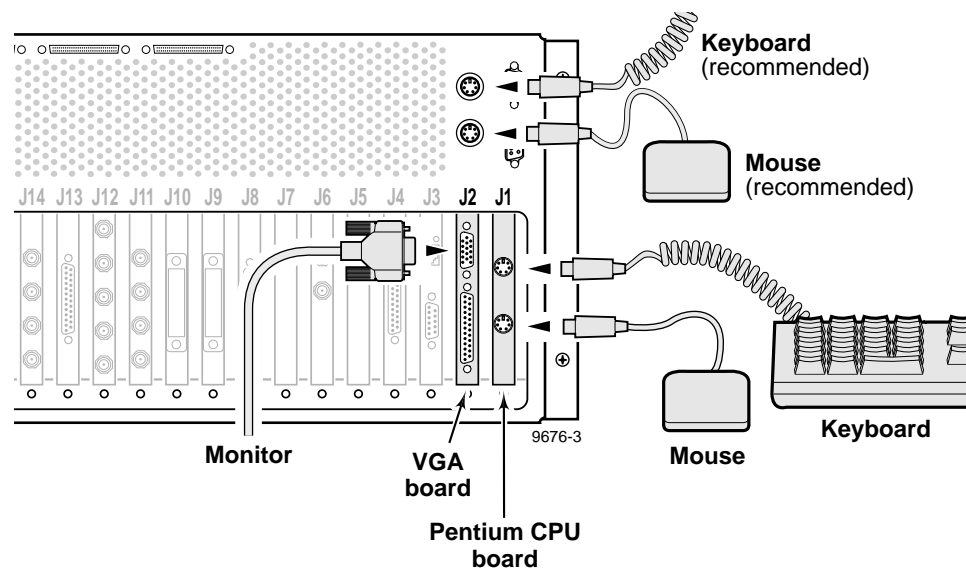


Figure 2-7. Mouse, Keyboard, and Monitor Connections

Connecting the Monitor

Slot J2 contains the VGA interface board. The board provides a monitor connector and a Parallel Port connector.

Connect the Monitor cable to the 15-pin DIN connector (see Figure 2-7 for location).

Connecting the Reference Genlock

The PDR200 provides a Reference Genlock board, standard on all configurations, with two BNC connectors and a 25-pin DIN connector. The BNC connectors form a bridging, high impedance loop-through for the house reference signal. This signal synchronizes the video clock and provides field reference. The 25-pin DIN provides Longitudinal Time Code interfaces, four in and four out. See Figure 2-8.

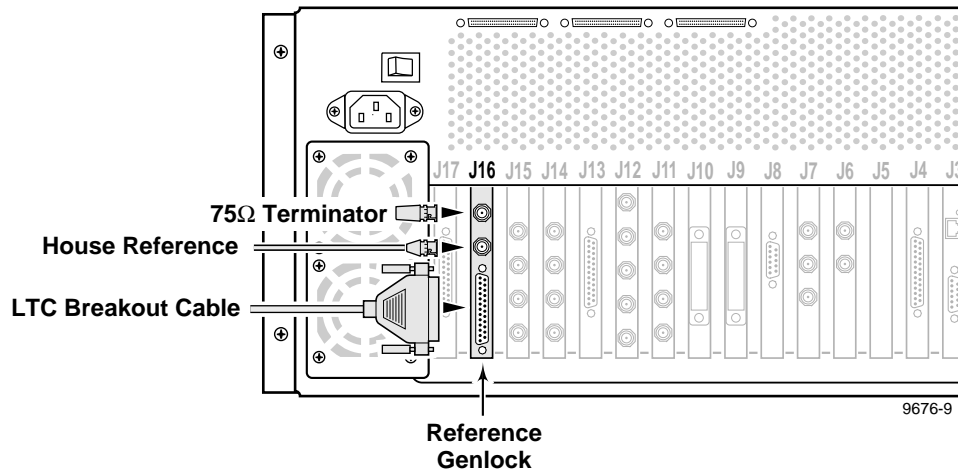


Figure 2-8. Slots J16 and J17 Cable Connections

To make cable connections to the Reference Genlock board, refer to Figure 2-8 and:

1. Attach the optional Longitudinal Time Code breakout cable (Figure 2-9) to the 25-pin DIN connector.

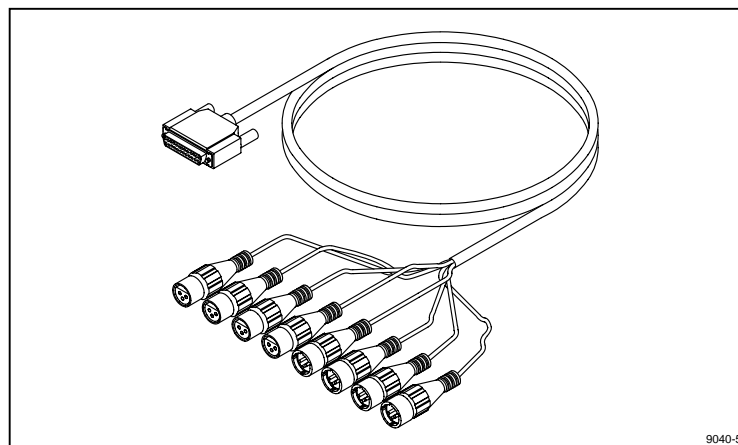


Figure 2-9. Breakout Cable

2. Place EMI gaskets on the BNC connectors as shown in Figure 2-6.
3. Attach the House Reference (Black Burst) BNC cable to the lower BNC connector.
4. Attach a 75Ω End-line Terminator to the upper BNC connector.

Connecting Video

The PDR200 supports digital and analog composite and component video formats. Video connections you make depend on your PDR200 configuration.

Connecting Serial Digital Video

The PDR200 allows Serial Digital Video I/O board installations for two channels of serial digital input and output. Depending on your configuration and referring to Table 1-1 in Chapter 1, this board occupies the slots as listed in Table 2-1.

Table 2-1. Serial Digital Video I/O Slot Locations

Configuration	Slot #	Standard	Optional
PDR202A	11		X
PDR204A	11		X
PDR202D	14	X	
PDR204D	14	X	
	15	X	

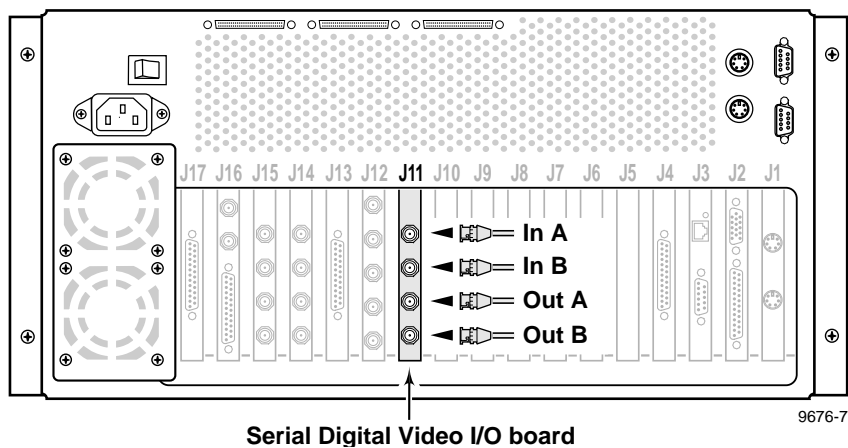


Figure 2-10. Serial Digital I/O Cable Connections Example

To make connections to the Serial Digital Video I/O board, see Figure 2-10 for an example and:

1. Place EMI gaskets on the four BNC connectors as shown in Figure 2-6.
2. Attach two BNC cables from serial digital sources to the IN A and IN B connectors.
3. Attach two BNC cables to serial digital sources to the OUT A and OUT B connectors.

Connecting Analog Composite Video In

The PDR200 allows Analog Composite Video In board installations. Depending on your configuration and referring to Table 1-1 in Chapter 1, this board occupies the slots as listed in Table 2-2.

Table 2-2. Analog Composite Video In Slot Locations

Configuration	Slot #	Standard	Optional
PDR202A	6		X
	15	X	
PDR204A	6		X
	15	X	
PDR202C	6		X
PDR204C	6		X
PDR202D	6		X
PDR204D	6		X

Each Analog Composite Video In board requires a companion Decoder board installed next to it. There are no external connections to the Decoder board. If the Analog Composite Video In board is installed, refer to Figure 2-11 for an example and:

1. Place an EMI gasket on both BNC connectors as shown in Figure 2-6.
2. Attach a 75 Ω BNC terminator to the bottom connector.
3. Attach a BNC cable for a composite video source to the top connector.

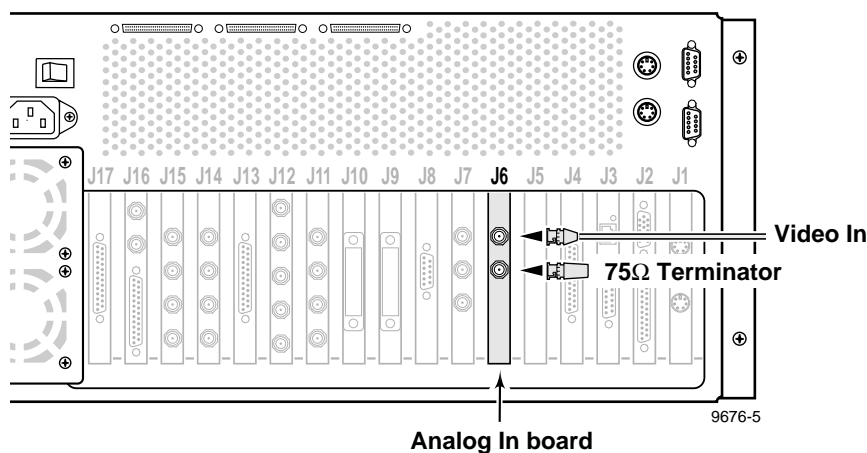


Figure 2-11. Analog In Cable Connections Example

Connecting Analog Composite Video Out

The PDR200 provides up to four channels of analog composite video output through the Analog Composite Video Out board. This board is always installed in Slot J12 (refer to Table 1-1 in Chapter 1). Standard for the PDR202A, PDR204A, PDR202C, and PDR204C, the board is an option for the PDR202D and PDR204D. The board also has a Monitor D connector which is the channel 4 video with Time Code burn-in available. To make connections to the Analog Composite Video Out board, see Figure 2-12 and:

1. Place an EMI gasket on each BNC connector as shown in Figure 2-6.
2. Attach four BNC cables for composite video outputs to the OUT A, OUT B, OUT C, and OUT D connectors.
3. Attach as wanted, a BNC cable for the channel 4 output with Time Code burned-in to the Monitor D connector.

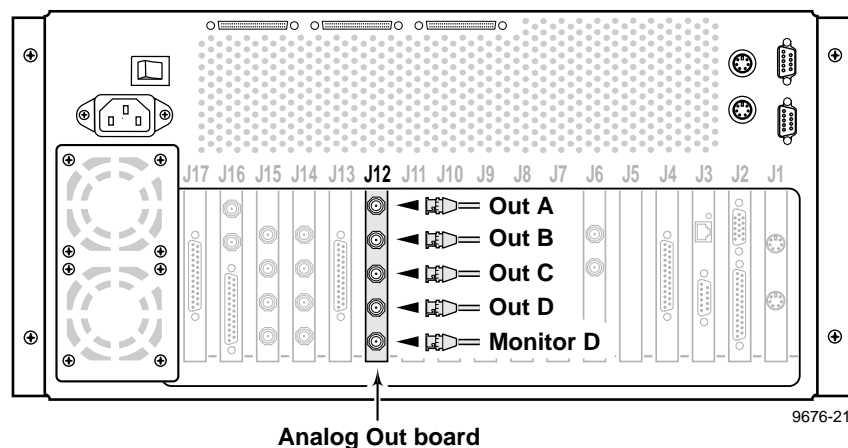


Figure 2-12. Analog Composite Out Cable Connections

Connecting Component Analog Video

The PDR200 allows Component Analog Video In board installations. Depending on your configuration and referring to Table 1-1 in Chapter 1, this board occupies the slots as listed in Table 2-3.

Table 2-3. Component Analog Video In Slot Locations

Configuration	Slot #	Standard	Optional
PDR202C	14		X
	15	X	
PDR204C	7		X
	11		X
	14	X	
	15	X	
PDR202D	11		X
PDR204D	11		X

The board accepts a single source of component analog video input, which it converts to digital component video conforming to SMPTE 125M (525-line) or EBU 3267 (625-line). The board then transfers the digital video to the Profile's video router bus. If an Analog Component Video In board is installed, refer to the example in Figure 2-13 and:

1. Place an EMI gasket on the three BNC connectors as shown in Figure 2-6.
2. Attach three BNC cables from an appropriate component analog video source to the connectors.

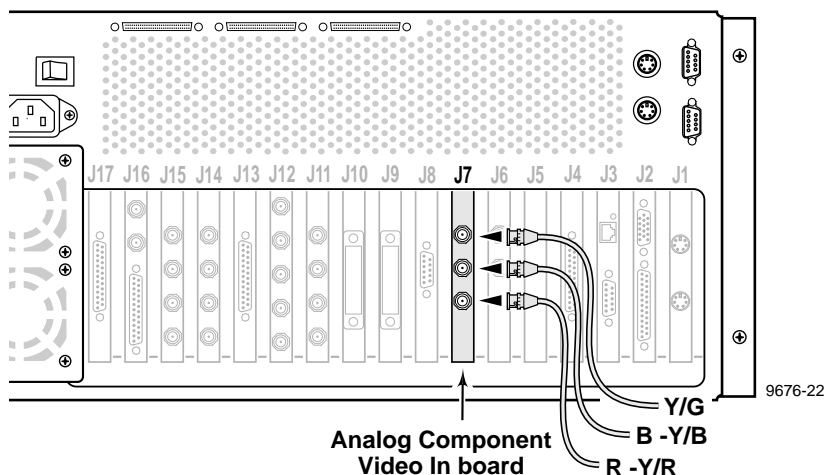


Figure 2-13. Analog Component Video In Cable Connections Example

Connecting Audio

The PDR200 supports digital, analog, and embedded audio formats of up to sixteen channels. The Audio Signal Processing Board (ASPB) handles all three formats.

Connecting AES/EBU Digital Audio

The ASPB, standard for all configurations, resides in Slot J13. Connections to this slot depend on the type of audio (analog or digital) and the number of audio channels.

Figure 2-14 shows ASPB connection to a XLR216 (or BNC216) audio breakout box for up to 16 channels (eight pairs) of AES/EBU digital audio. AES/EBU digital audio sources are then connected to the XLR (or BNC) connectors on the break-out box.

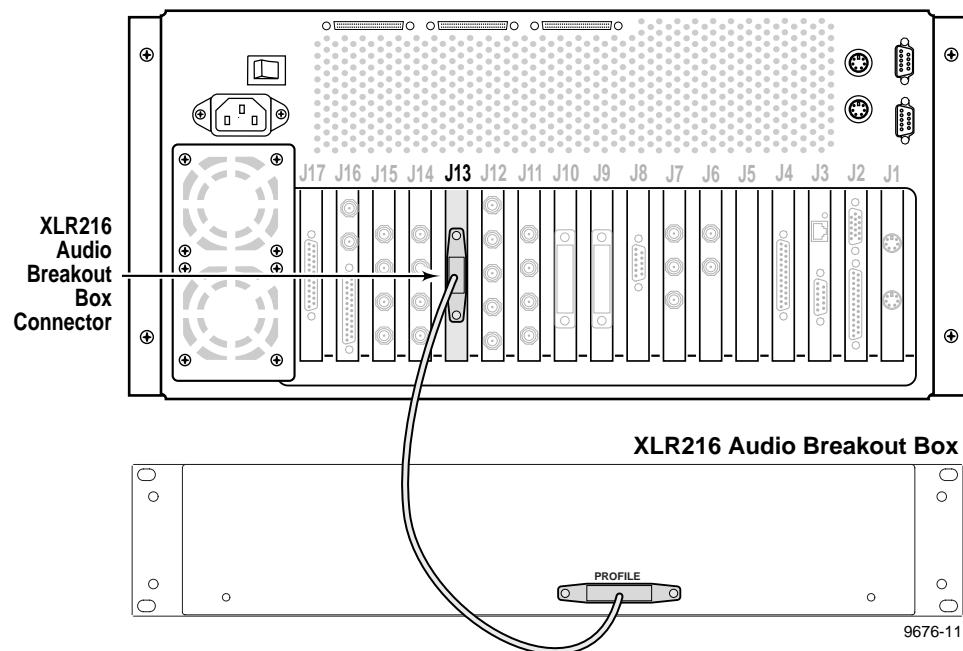


Figure 2-14. ASPB Connections With AES/EBU Digital Audio

Connecting 8 Analog/Digital Channels

Figure 2-15 shows ASPB connection to the PAC208 Profile Audio Chassis for up to 8 channels of analog and/or 8 channels of digital audio.

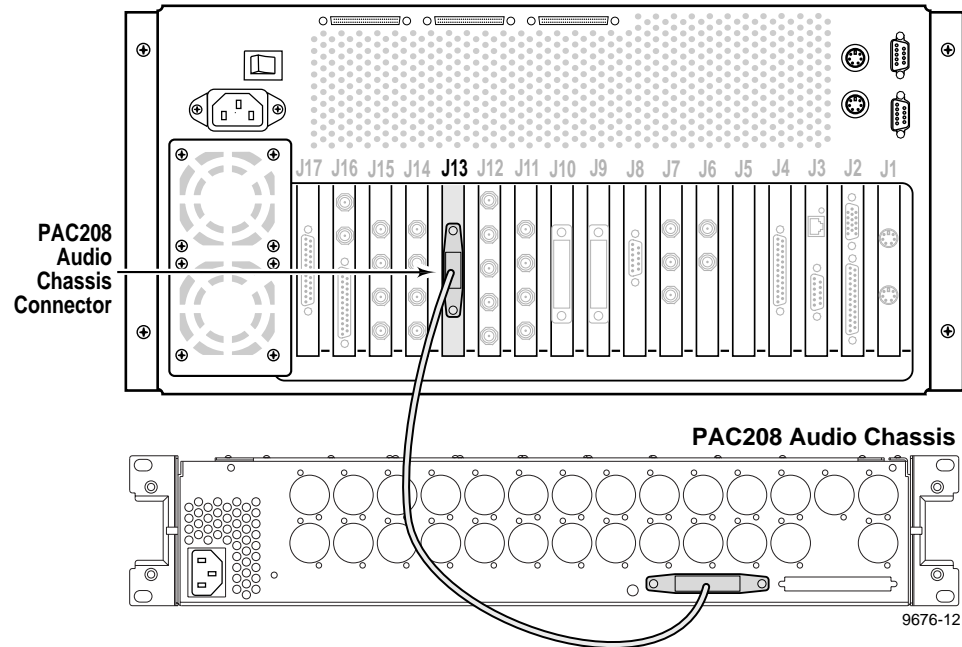


Figure 2-15. ASPB Connections With 8 Analog and 8 Digital Audio Channels

Connecting 16 Analog/Digital Channels

Figure 2-16 shows ASPB connection to the PAC216 Profile Audio Chassis and the PAC216 Audio Expansion Panel for up to 16 channels of analog audio and/or 16 channels of digital audio.

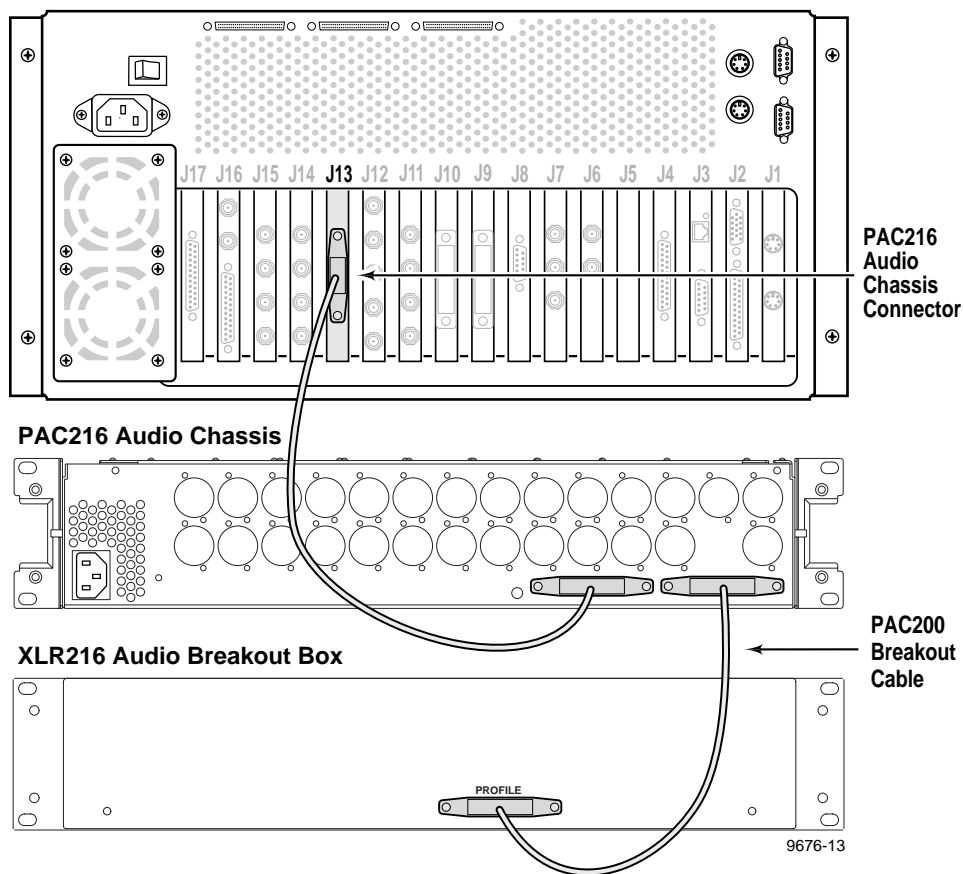


Figure 2-16. ASPB Connections With 16 Analog and 16 Digital Audio Channels

Connecting SCSI-2 Devices

The PDR200 provides a number methods for connection to SCSI-2 devices. SCSI connectors reside on the Master and Slave Enhanced Disk Recorder boards, on the System SCSI board, and along the top of the rear panel (see Figure 2-17). Beyond the Master Enhanced Disk Recorder board, standard on all configurations, the number of SCSI connectors available depends on your configuration (refer to Table 1-1 in Chapter 1).

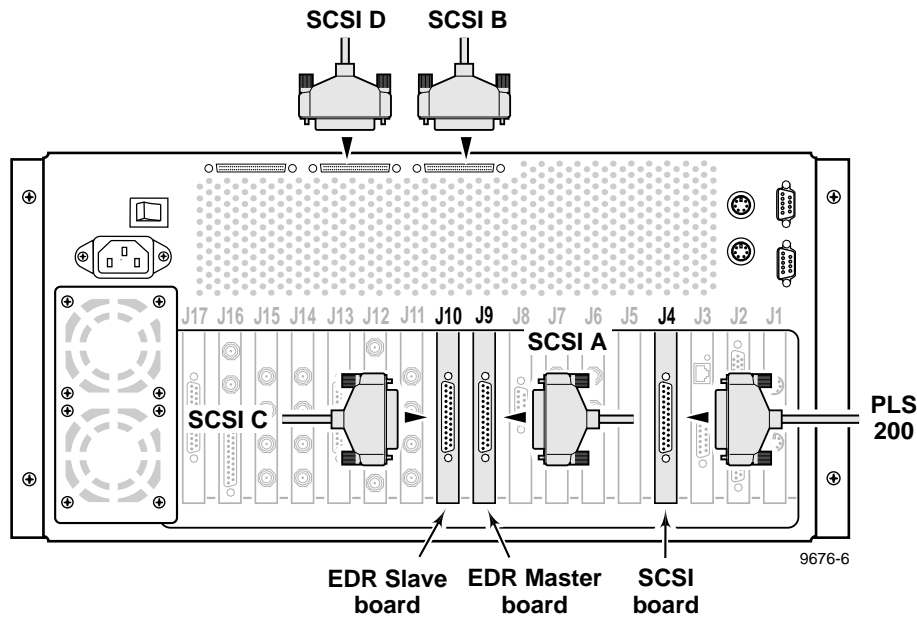


Figure 2-17. SCSI Cable Connections

Slot J9 always contains the Master Enhanced Disk Recorder board (see Figure 2-17). This board provides a SCSI A bus and a SCSI B bus. Connect SCSI-2 devices to the SCSI A bus connector on the board at the rear panel. (The SCSI B bus connector on the Profile rear panel is not used at this time.)

Slot J10 (see Figure 2-17) only contains the Slave Enhanced Disk Recorder board standard on all 4-channel Profiles (i.e., PDR204A, PDR204C, and PDR204D). The slot has a blank for all other configurations. This board provides a SCSI C bus and a SCSI D bus. Connect SCSI-2 devices to the SCSI C bus connector on the board connector at the rear panel. (The SCSI D bus connector on the Profile rear panel is not used at this time.)

The PDR200 reserves board Slot J4 for a SCSI board (see Figure 2-17) which is part of the PLS 200, Profile Library System option. If installed, connect the cable from the PLS 200, Profile Library System, to this board. (See the PLS 200 Installation manual for details about installing the PLS 200.) Note that the SCSI board is only used with the PLS 200 at this time.

See Figures 2-18 through 2-21 for examples of Tektronix SCSI-2 devices that can be connected to the SCSI-2 connectors on the Master and Slave EDR boards.

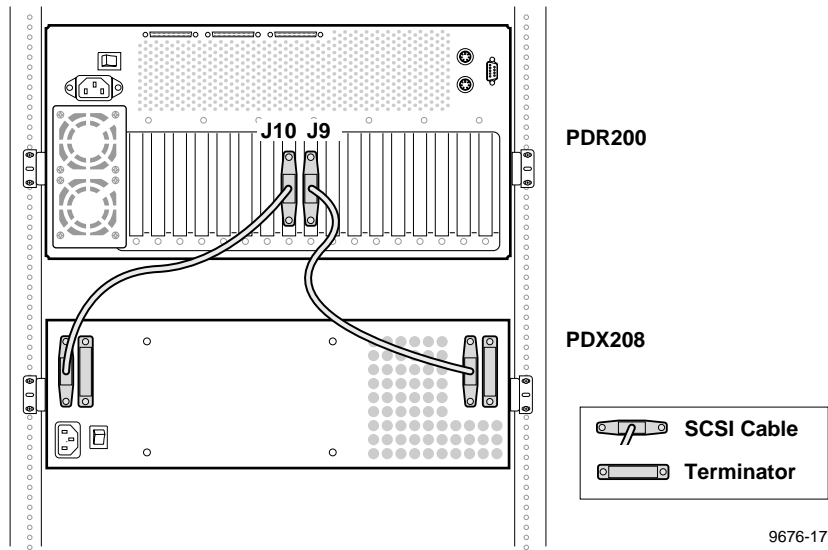


Figure 2-18. Example 1: PDR 200 to PDX 208 Disk Expansion Connections

Example 1 (Figure 2-18) shows disk expansion of a 4-channel Profile. In this example, the PDX208 provides four 9GB drive expansion to the SCSI A bus of the Master EDR and four to the SCSI C bus of the Slave EDR. This expands each bus from 36 GB to 72 GB.

NOTE: This example requires attachment of SCSI Terminators to the unused SCSI connectors on the PDX 208 as shown in Figure 2-18.

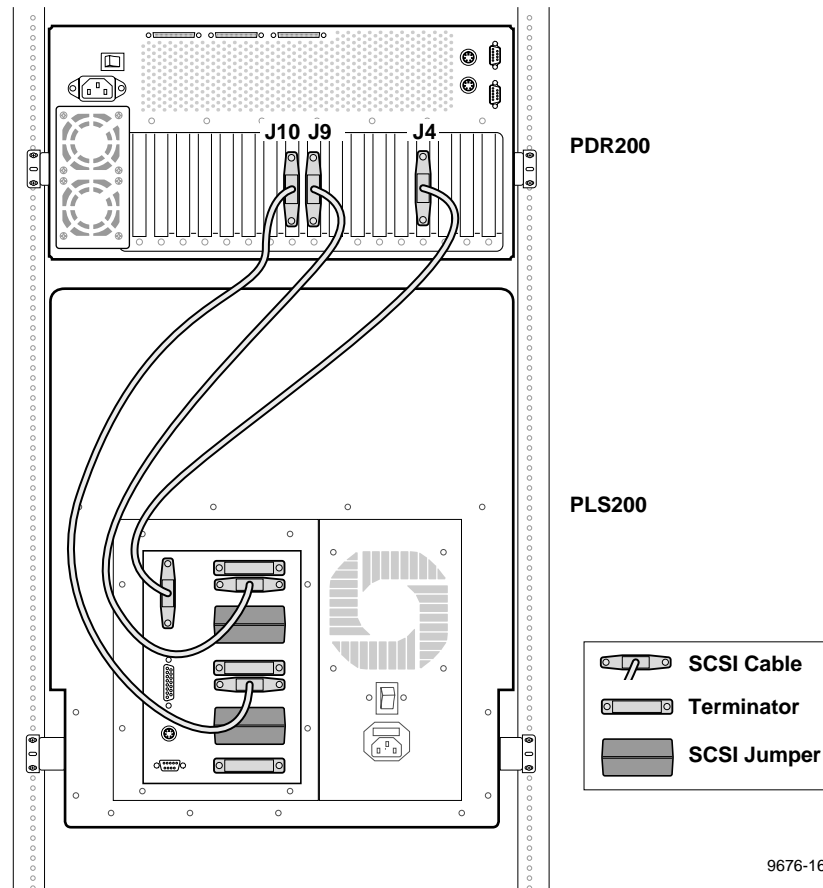


Figure 2-19. Example 2: PDR 200 to PLS 200 Connections

Example 2 (Figure 2-19) shows connection of a Profile Library System (PLS200) to a 4-channel PDR200. This example allows archiving material on the PDR200 to the PLS200 through the SCSI A and SCSI C buses. The SCSI board at PDR200 Slot J4 provides control signals.

NOTE: This example requires attachment of SCSI Terminators on the PLS200 as shown in Figure 2-19.

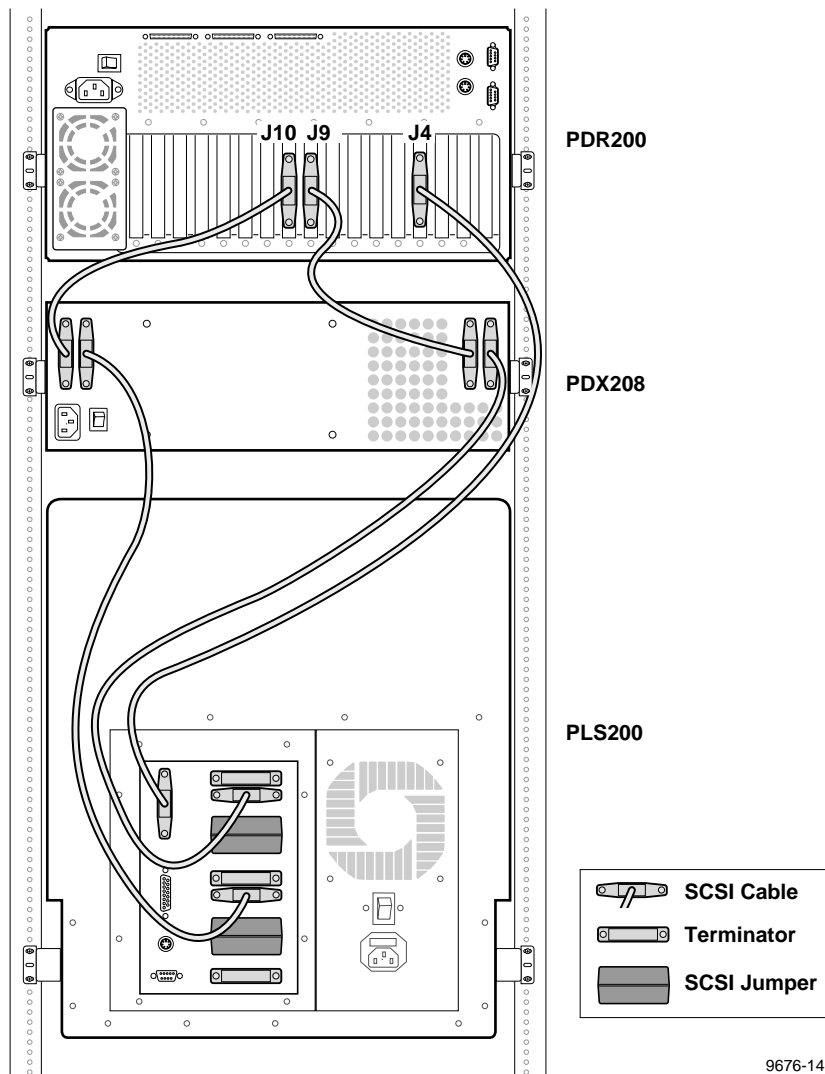
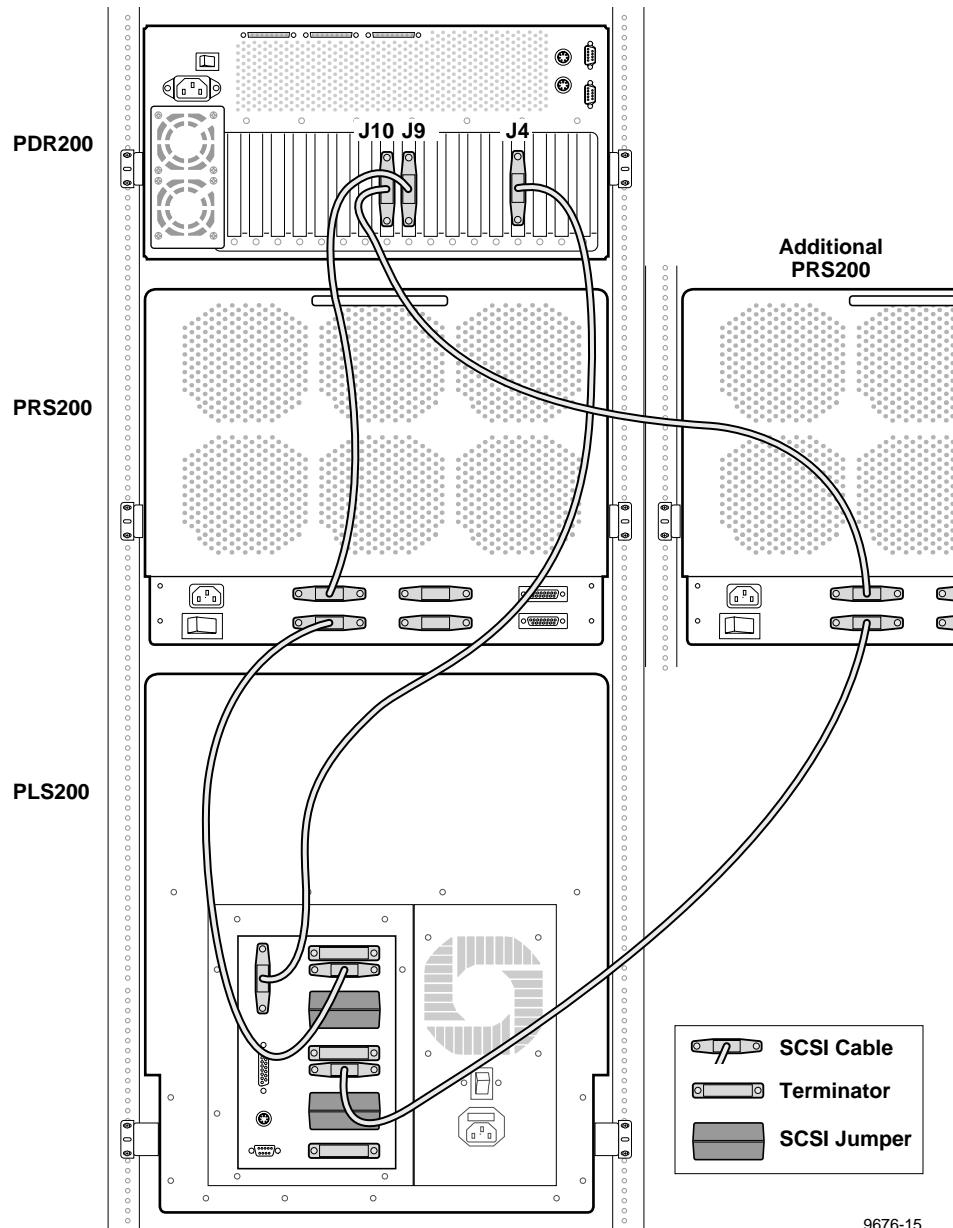


Figure 2-20. Example 3: PDR 200 to PDX 208 and PLS 200 Connections

Example 3 (Figure 2-20) shows disk expansion of a 4-channel Profile and connection to a Profile Library System (PLS200). This example combines Example 1 and Example 2. Note that cabling from the PLS200 connects to the SCSI A and SCSI C buses on the PDX208.

NOTE: This example requires attachment of SCSI Terminators on the PLS200 as shown in Figure 2-20.



9676-15

Figure 2-21. Example 4: PDR 200 to Multiple PRS 200s and PLS 200 Connections

Example 4 (Figure 2-21) shows connection of the PDR200 to two RAID Storage chassis (PRS200) and to a Profile Library System (PLS200). In this example, cabling connects the SCSI A bus to a PRS200 and the SCSI C bus to another PRS200.

NOTE: This example requires attachment of SCSI Terminators on the PLS200 as shown in Figure 2-21.

Connecting RS-422 Devices

The PDR200 provides eight RS-422 interface ports through a single connector on the RS-422 Interface board. This connector is then cabled to a RS-422 Connector Panel for connection of up to eight RS-422 devices. See Figure 2-22. Attach the cable from the RS-422 board to the 63-pin connector on the RS-422 Connector Panel.

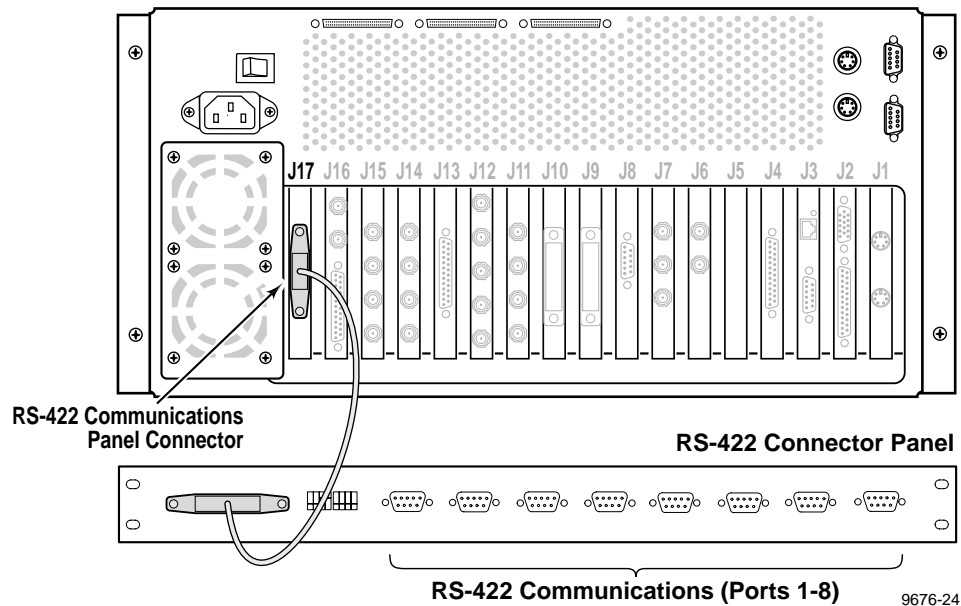


Figure 2-22. PDR200 and RS-422 Connector Panel Cable Connection

Connecting Network Devices

The PDR200 supports connection to an Ethernet and Fibre Channel networking.

Connecting Fibre Channel

If the Fibre Channel board is installed, there are a number of ways it may be connected for networking. Profile Video Networking requires both a Fibre Channel network and an Ethernet LAN. See Chapter 4, Profile Networking, for Fibre Channel connection information.

Connecting to Ethernet

The PDR200 provides an optional System LAN board for connection to Ethernet. See Chapter 4, Networking Your Profile, for Ethernet connection information.

Making Power Connections

Power Source

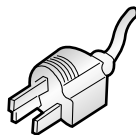
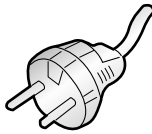
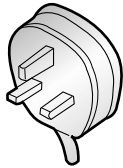
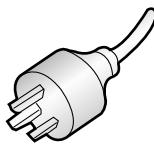
The PDR200 and PAC208/216 operate from a single-phase power source having one of its current-carrying conductors at or near earth ground (the neutral conductor). Only the line conductor is fused for over-current protection. Tektronix does not recommend connection to systems that have both current carrying conductors live with respect to ground as power sources, such as phase-to-phase in multi-phase systems.

Source Power Frequency and Voltage Ranges

The PDR200 and PAC 208 operate at line frequencies of 50 or 60 Hz at nominal voltages from 100 to 240 VAC. Table 2-4 lists the power cord options available. Figure 2-23 shows the location of the PDR200 power cord connector (just below the main power switch).

Insure that the power switches of all equipment are set Off. Attach all power cords from the equipment to the appropriate power sources.

Table 2-4. Power Cord Options for the PDR200 and PAC 208

Power Plug	Description
	Standard 120 V, 3-prong power plug on a 2.5 meter long power cord. For use with common ground systems in North America.
	Option A1 Universal European 230V/10A power plug on a 2.5 meter long power cord.
	Option A2 United Kingdom 230V/10A power plug on a 2.5 meter long power cord.
	Option A3 Australian 230V/10A power plug on a 2.5 meter long power cord.

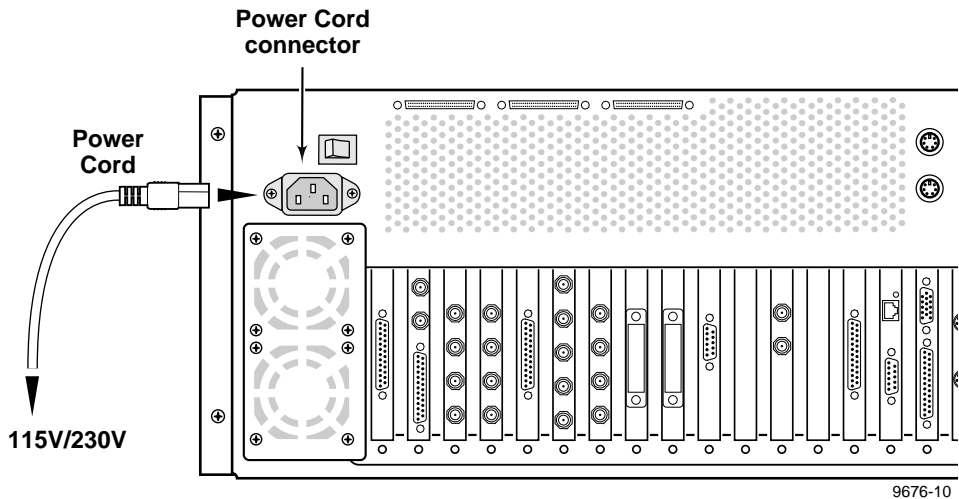


Figure 2-23. Power Cord Connector

This completes the mechanical installation of the PDR200. Continue with Chapter 3, *Applying Power*.

Starting Your Profile

This chapter contains of information to get you up and running with your PDR200. The tasks you will perform are:

- Turning Profile and peripheral equipment On.
- Logging in.
- Updating your Emergency Repair Disk.
- Configuring your Profile.

This chapter also includes a brief verification test and troubleshooting information.

Power On/Off

When Profile power is initially turned on, you will immediately have two choices.

- One choice is to let the system go through an automatic login sequence, at the end of which the Profile VdrPanel appears. This is the normal procedure which occurs:
 - At initial power on. (The factory set user to ***profile*** prior to shipment.)
 - When ***profile*** was the user prior to the last time the Profile was turned off.
- The second choice is to interrupt the automatic login by pressing and holding the SHIFT key for a few seconds as the system boots up. Interrupting the automatic login is usually done to manually login as Administrator. You will need to be logged in as Administrator for Windows NT administration and to:
 - Install new software application or upgrades (see Profile Release Notes or the product manual)
 - Start the vdrsvc utility (see the Profile Family User Manual)
 - Set IP addresses (see Chapter 4, Networking Your Profile)
 - Configure network boards (see Chapter 4, Networking Your Profile)

Turning Power On

See Figure 3-1 for the location of the main power switch on the rear panel and Figure 3-2 for the PDR200 front panel switch. To turn Profile power On:

1. Turn the power on to all system peripheral equipment.
2. If appropriate, turn PLS 200 power on.
3. If appropriate, turn PRS 200 power On and wait approximately 1-1/2 minutes.
4. As appropriate, turn PDX 208 and PAC 208/216 power On.
5. On the rear panel of the PDR 200 (see Figure 3-1), turn the main power switch to **1 (On)**.
6. On the front panel of the PDR 200 (see Figure 3-2), turn the power switch to On.

Turning Power Off

To turn your Profile Off without loss of data, you will need to:

1. Quit or shut down all Profile Application software by selecting QUIT or EXIT from the File menu.
2. Exit or Quit any other processes which may be running in the same way.
3. Log off or shut down Windows NT by simultaneously pressing the Ctrl, Alt, Delete keys and choosing SHUTDOWN.
4. Switch power off.

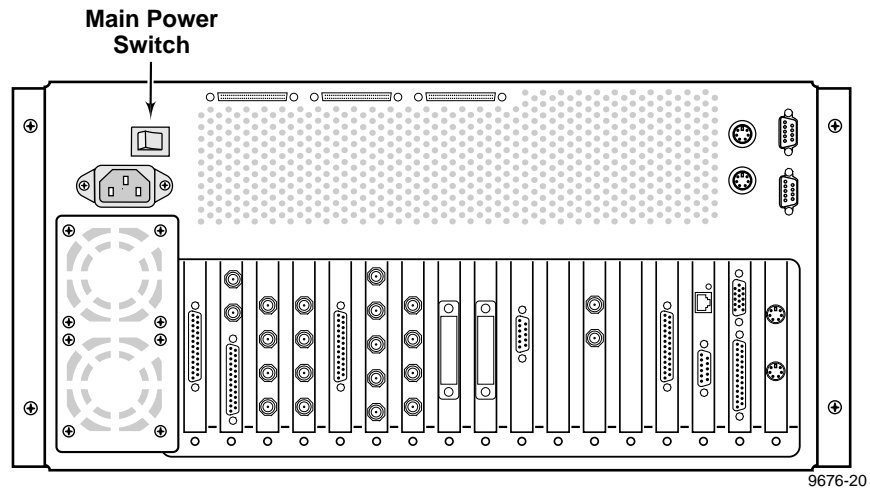


Figure 3-1. Rear Panel Main Power Switch

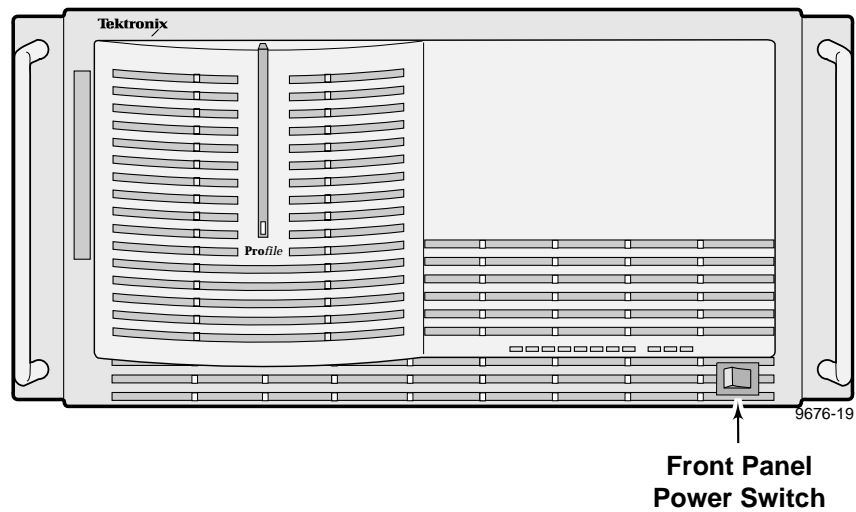


Figure 3-2. Front Panel Power Switch

System Set-up

If you have not interrupted the automatic login sequence, your Profile will go through its normal self-check and initialization sequence. When completed, the VdrPanel, shown in Figure 3-3, appears on the monitor.

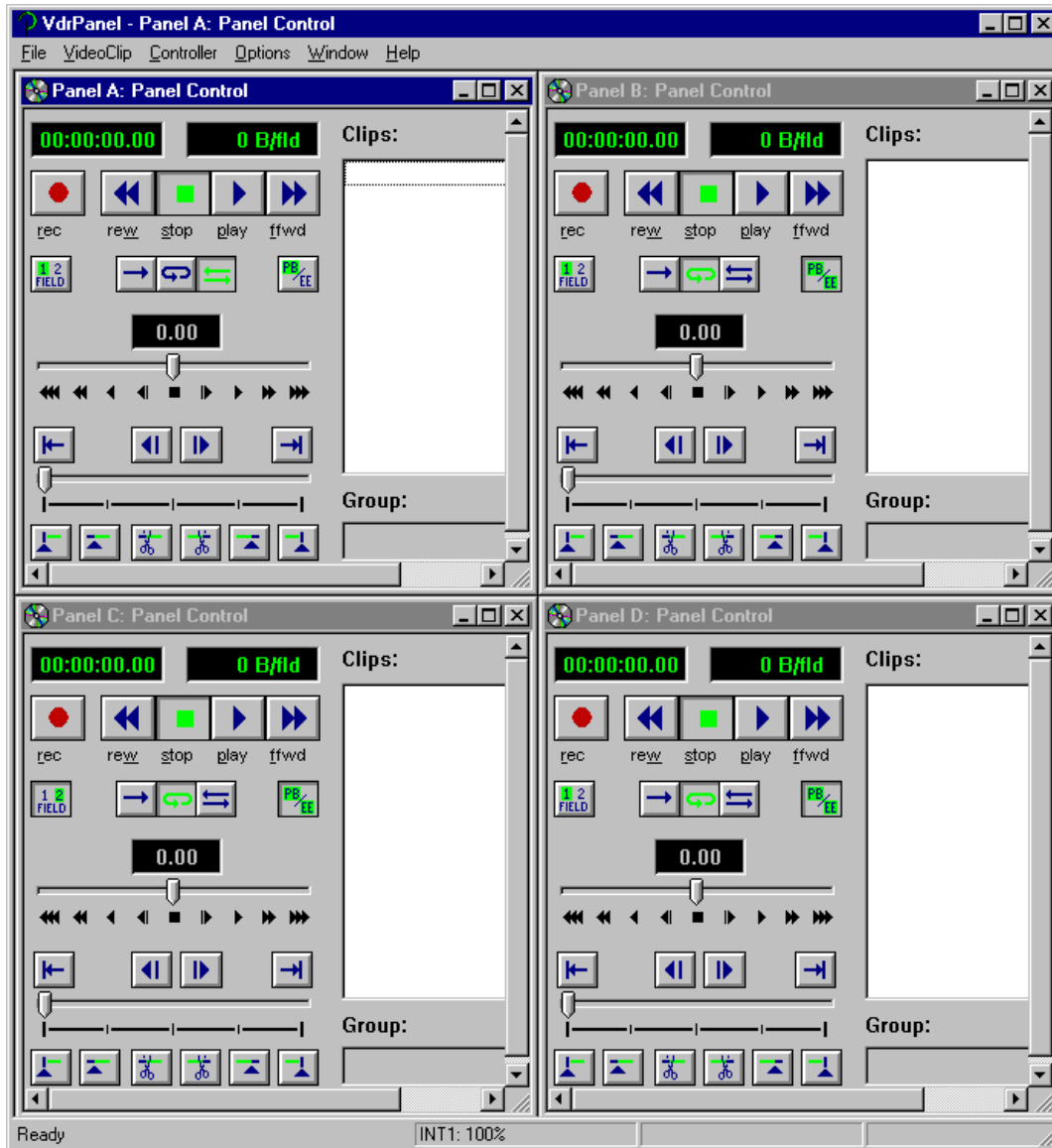


Figure 3-3. Profile VdrPanel

System setup for the most part depends on the configuration of your PDR200. However, one of the first things you will want to do is make an emergency repair disk so that in the event of a minor problem, you will not have to completely reload software.

Creating/Updating an Emergency Repair Disk

With a new system or whenever you upgrade your software, Tektronix strongly recommends that you either create a new emergency repair disk or upgrade the one shipped with your Profile. This minimizes the chances that you will need to completely re-load the software for a minor problem.

To update or make a new emergency repair disk, you need the 3.5" Repair Disk included with your Profile (or a blank one). Mark it clearly as the emergency repair disk for PDR200 serial number xxxxxxxx. (It is not necessary to format the disk.)

NOTE: The emergency repair disk is PDR200 specific. Make sure that the emergency repair disk is clearly marked with its PDR200 serial number.

1. From the Start menu, choose the Run command.
2. Enter **rdisk /s** in the Run dialog box.
3. Select the **Update Repair Disk** button.
4. Insert the floppy disk in the **A** drive and select **OK**. The utility then formats the disk and loads all of the information from the registry.
5. When the operation is complete, select the **Exit** button to leave the Repair Disk Utility.
6. Remove the Emergency Repair Disk from the Profile and store in a convenient location.

Configuring Your Profile

Before you can use your Profile system to Record and Playback clips, you must configure it to use the inputs and outputs that you connected in Chapter 2. Perform the tasks listed below.

- Configure Video I/O, Audio I/O, Reference Genlock, and Time Code (see the Configuration Manager discussion in the Profile Family User Manual).
- In addition, if your system includes one or more external storage devices, you will have to use the disk utility to set up an external dataset. (See the Disk Utility discussion in the Profile Family User Manual.)
- Configuring with a LAN board (see Chapter 4, Networking Your Profile).
- Configuring with Fibre Channel (see Chapter 4, Networking Your Profile).

Installation Verification

To verify that your Profile has been correctly installed, perform the following:

1. From the VdrPanel, record a clip which contains both audio and video (not Black).
2. Play back the clip.

If you get any errors, check the following:

- If you have Black with the audio, recheck your Video I/O set up through Configuration Manager. Make any necessary changes and repeat Steps 1 and 2 above.
- If you have the video without audio, recheck your Audio I/O configuration through Configuration Manager. Make any necessary changes and repeat Steps 1 and 2 above.
- For other errors, see Initial Power On Checks.
- If errors persist, check the Profile Error Log and contact your Tektronix representative. (See the Profile Family User Manual, *Using Profile Utilities* to access the Profile Error Log.)

Initial Power On Checks

Tektronix has made every effort to insure that your Profile was in perfect operating condition before it left the factory. However, unforeseeable problems can occur. The discussion below applies to initial installation only. See the Profile PDR200 Service Manual for any post-installation problems.

NOTE: Please take notes of trouble indications and what you do in attempting to correct any problem. Doing so will assist Customer Support and Field Service personnel in the event additional action is required.

If you have a problem with the initial Profile power On:

- First check all connections and power switches.
- Check the status of the Profile front panel LED indicators.

If the large green LED just to the left of center is not lit, replace the power cord and try again. If this problem still exists, contact your Tektronix representative.

If one or more of the eight green Disk Activity LEDs remains lit or stays lit for a long time, power the Profile Off and then back On again. If this problem still exists, power the Profile Off and contact your Tektronix representative.

If the **OVER TEMP**, **FAN FAULT**, and/or **SYS FAULT** red LED is On, immediately power the Profile Off and contact your Tektronix representative.

- At the Profile rear panel, check the status of the LEDs on the boards listed in Table 3-1, not all of which may be installed on your Profile

Table 3-1. Rear Panel Board Indicators

Board	Status/Description
SYSTEM LAN (Slot J3)	Green LED should be On to indicate there is an active connection between the board and the network hub. Amber LED flashes when there is network activity.
VIDEO IN Analog Composite (Slot J6)	Red LED should be Off. (Flashes On at power up and then Off.)
VIDEO IN Analog Component (Slot J7 and others)	Red LED should be Off. (Flashes On at power up and then Off.)
FIBRE CHANNEL (Slot J8)	Red LED should be Off.
DISK RECORDER Master/Slave (Slots J9/J10)	Red LED(s) should be Off. (Flash On at power up and then Off.)
VIDEO I/O Serial Digital Component (Slot J11 and others)	Red LED should be Off. (May be On briefly at power up and then go Off.)
VIDEO OUT Analog Composite (Slot J12)	Red LED should be Off. (Flashes On at power up and then Off.)
AUDIO I/O Digital AES/EBU (Slot J13)	Red LED should be Off. (Flashes On at power up and then Off.)
REFERENCE Analog Video (Slot J16)	Red LED should be Off. (Goes On at power up and after a few seconds goes Off.)

If all LEDs are as indicated in Table 3-1, run the diagnostics below. If board LEDs are not as indicated, contact your Tektronix representative.

System Board Diagnostics

Run system board diagnostics if you have a problem and the rear panel LEDs are as indicated in Table 3-1. To run system board diagnostics:

1. Access the **PDR Debug Tools** folder.
2. Select the **PDR Diagnostics** icon. The **Main Diagnostics** window appears.

This window is comprised of three regions. The region on the left contains buttons which identify the boards installed in each of the slots, J1 - J17. Selecting a button brings up the test control buttons for that board's diagnostics in the upper right portion of the window and loads the i960 diagnostics program for that board. Selecting one of the tests executes that test and test results are then shown in the lower right portion of the diagnostics window.

When the diagnostics window is first opened, you may get a message

Checking availability of VDR Services. Please wait . . .

Wait approximately a minute (or more) for this message to go away before proceeding.

3. Select the **Master EDR** button in the board slot ID region on the **Main Diagnostics** window. Test control buttons for the Master EDR board appear.

Another window, called **DRSTART** also appears. DRSTART programs the PLDs, configures the PCI bus devices on the Master EDR board, and loads a program called **edrhx** into i960 memory. When DRSTART is complete, the **DRSTART** window is replaced by a **GDB960** window and i960 diagnostics is loaded into EDR memory. Test results will appear in this window which remains open until you exit the Master EDR board menu.

4. When a **READY** prompt appears in the GDB960 window, select the **All Tests** button on the Master EDR board menu.
5. Observe the messages which appear in the GDB960 window. If any ****FAILED**** message appears, the EDR Master board is bad and needs to be replaced.
6. If no failures are noted, at the end of the tests, when **READY** re-appears, select Done in the Master EDR board menu.
7. Repeat Steps 3 through 6 for the **Slave EDR** button.
8. If you have a Fibre Channel board and your Profile has been configured for it, repeat Steps 3 through 6 for the **Fibre Channel** button. (See Chapter 4, Networking Your Profile for Fibre Channel information.)

During the Fibre Channel test, the Fibre Channel board goes through its own power-up initialization. If the board is connected to a network or if a loopback connector is attached to the LAN board, power-up initialization completes almost immediately, otherwise it takes about 30 seconds.

One of the Fibre Channel board tests is **GfcDMA**, which is a DMA test. This checks the ability of the Fibre Channel board to access memory on the EDR boards through the global PCI bus. The DMA test must wait for completion of the initialization before it can proceed. The Fibre Channel board may appear to be inoperative during initialization and while the DMA test runs. If after approximately one minute the **READY** prompt does not re-appear, replace the Fibre Channel board.

9. Access the Diagnostics menu bar and select **Tests**, then select **All Board Tests**.

This executes diagnostics for all installed boards and, for a fully loaded system, takes between 10 and 15 minutes. Once initiated, you cannot cancel this diagnostics operation.

10. Select **Quit** to exit the Main Diagnostics window.

Once you have checked all the boards, re-run Installation Verification described previously.

If you have any board failures or any other unresolved installation problems, contact your Tektronix representative. See **Tektronix Product Support** in Chapter 1.

Networking Your Profile

This chapter contains information about Profile and Ethernet configurations, and how to connect, configure, and initially test your PDR200 for Ethernet and Fibre Channel networking.

Network Configurations

Ethernet and Fibre Channel provide two types of networking. Ethernet provides a path for command and status signals from one device to another. It also allows Windows NT file transfers between devices. If you are only connecting Ethernet to your Profile, see *Ethernet Network Setup*.

Fibre Channel provides connectivity for high speed media data transfers between Profiles.

Using Fibre Channel to network groups of greater than two Profiles requires a LAN (Ethernet) hub or network and a Fibre Channel hub. See *Ethernet Network Setup* and *Fiber Channel Network Setup*.

Network Models

The following discusses two examples of Ethernet and Fibre Channel networking. The first example shows connection of several Profiles with an Ethernet hub (or existing Ethernet network) and a Fibre Channel hub in a stand-alone network. That is, a network that does not have a path to another network. The second example of Ethernet and Fibre Channel networking shows connection of several hubs.

Networking Several Profiles

Hubs provide an easy and efficient method for the connection and disconnection of machines without rewiring. If you want to connect more than two Profile systems together for video networking, you will need to connect each system to an Ethernet hub and a Fibre Channel Video Hub. Figure 4-1 shows an example of this networking.

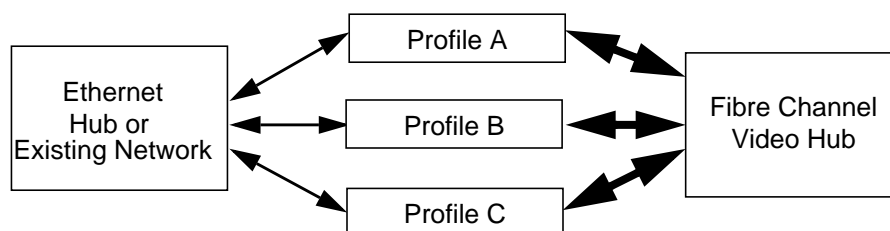


Figure 4-1. Basic Hub Connections

Networking Several Hubs

Connecting hubs together provides a way to add more and more systems to the network. Large Fibre Channel networks will probably not perform as well as smaller ones due to bandwidth limitations. Figure 4-2 shows a simple use of several hubs.

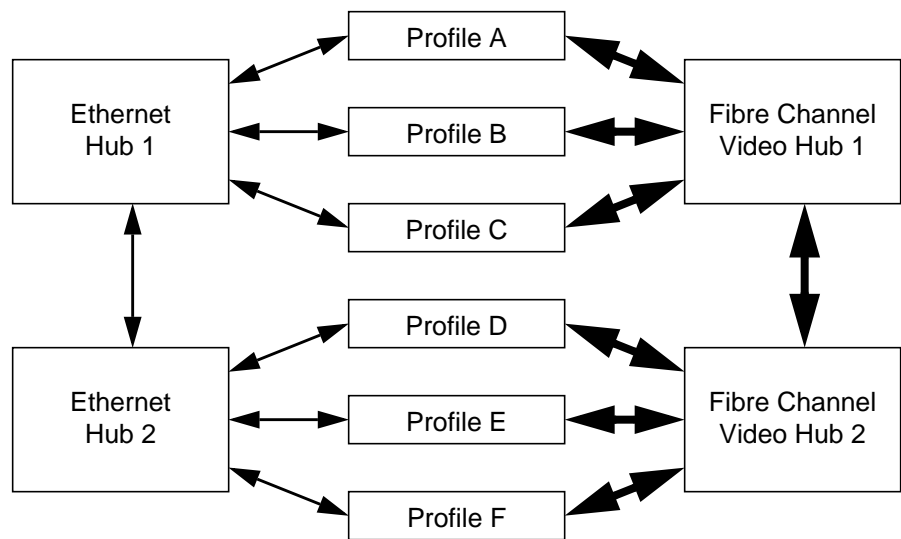


Figure 4-2. Using Several Hubs

The number of hubs required depends on the number of connections supported by each hub. Remember that one of the connections is needed to connect to the next hub. You must use appropriate cables for the distance between devices.

Building a Fibre Channel Network

The simplest network connection is the point-to-point connection shown in Figure 4-3. This method allows you to connect two Profiles together, which is the ideal installation for initial setup to ensure that all components are working and correctly configured before adding additional Profiles to your Fibre Channel network.

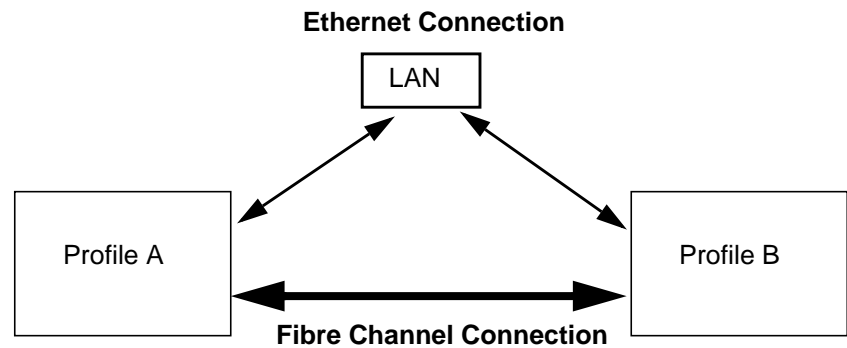


Figure 4-3. Point-to-point Fibre Channel Network Connection

Ethernet Network Setup

The following describes connecting, configuring, and testing your Ethernet (LAN) network. Perform these tasks for Ethernet-only networking and for Fibre Channel networking.

Connecting Ethernet

Figure 4-4 shows the location of the System LAN board for connection of the Ethernet cable. See Appendix B for connector pin-out information.

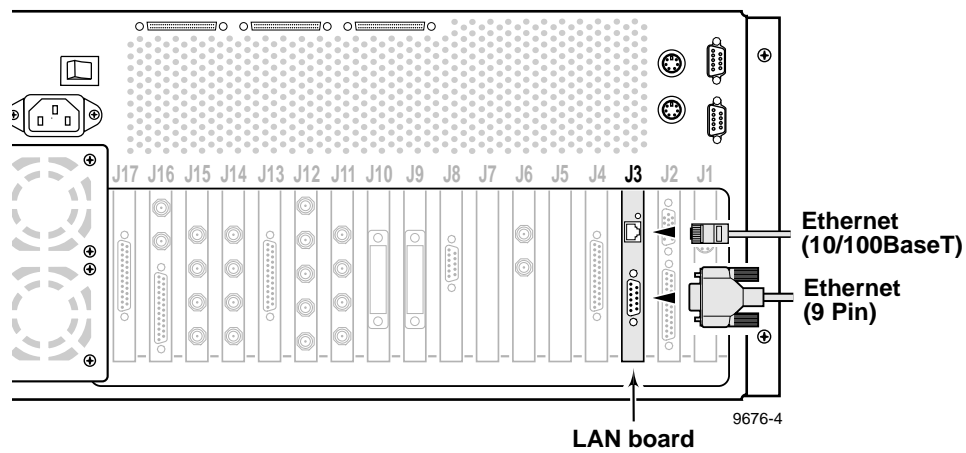


Figure 4-4. System LAN Board

Configuring Ethernet for TCP/IP

NOTE: *If you are connecting to an existing TCP/IP network, you must contact your network administrator before proceeding with TCP/IP configuration. Please review this procedure with your network administrator before performing it.*

The following steps assume that you **are not** connecting to an **existing** TCP/IP network. You must be logged in as Administrator to perform the following tasks.

1. From Control Panel/Networks, bring up the TCP/IP configuration dialog box.
2. You will need to fill in two fields in the TCP/IP dialog box; IP Network Address and Subnet Mask. For the IP Network Address, we recommend the following numbering convention. Note that each Profile **must** have a unique IP address.

For the first profile, use 128.181.1.1

For the second profile, use 128.181.1.2

For the third profile, use 128.181.1.3

etc. ...

3. For the Subnet mask, use the same value on all Profiles: 255.255.255.0 and then click **OK**.

Testing Your Ethernet Connection

To test your Ethernet connection:

1. Power off (see Power Off procedure) and then reboot the Profile.
2. Verify TCP/IP connectivity between Profiles by opening a command prompt window and typing **ping 128.181.1.n**, where n is the number for this Profile.
3. Repeat step 2 for at least one other Profile in the network.

Fibre Channel Network Setup

The following describes connecting, configuring, and testing your Fibre Channel network. Perform the Ethernet Network Setup before doing the Fibre Channel Network Setup tasks.

Connecting Fibre Channel

Figure 4-5 shows the location of the Fibre Channel board for connection of the Fibre Channel cable to the Video Net Hub. See Appendix B for connector pin-out information. The Fibre Channel cable can be:

- Copper cable up to 25 meters.
- Up 500 meters Multi-mode optical cable with optional copper-to-fiber Optical Media Interface Adaptor (between Video hubs). See Figure 4-6.

NOTE: The Video Net Hub may be supplied with caps over the connectors. To maintain EMI compliance, only remove necessary caps. If you disconnect a Profile, place a cap on the vacant connector.

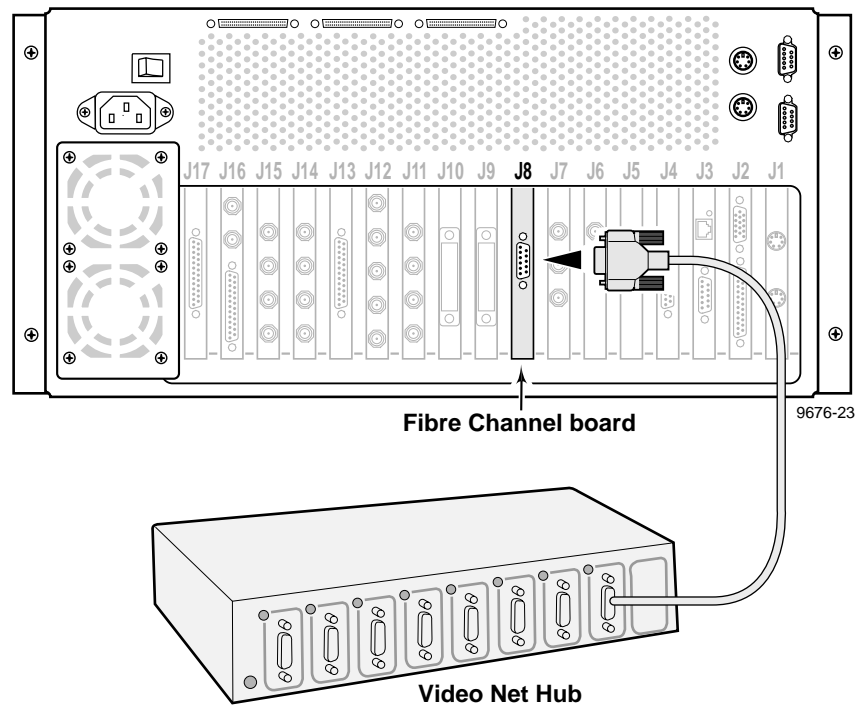


Figure 4-5. Fibre Channel Board and Video Hub Connection

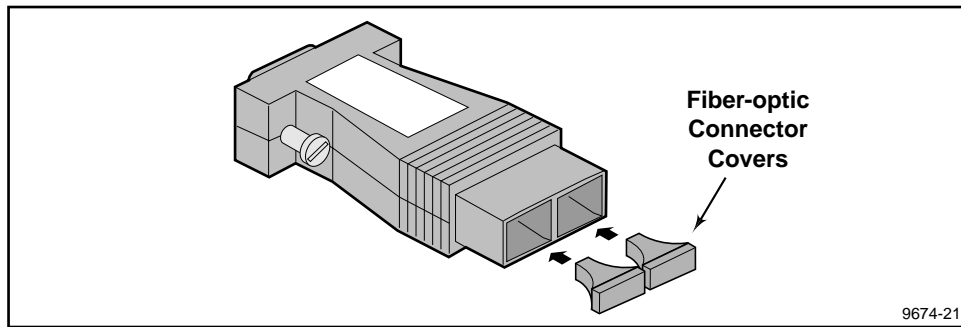


Figure 4-6. Copper-to-fiber Optical Media Interface Adapter

Configuring the Fibre Channel Board Address

Every Fibre Channel node (board) on a network must have a unique hardware address between 1 and 120. A command line utility is provided to allow you to retrieve, set, and change the hardware address of the Fibre Channel board. When setting up and/or adding a Fibre Channel board to your Profile, you must insure that each hardware address is unique.

To retrieve the current hardware address, type:

fcconfig

To set or change the hardware address, type:

fcconfig -a hardware_address

When initially installing a video network, you may want to assign unique hardware addresses at the onset. When installing additional nodes to an existing video network, verify all current hardware addresses with **fcconfig** (as shown above) then assign and set hardware addresses for any new nodes with **fcconfig -a hardware_address**

Configuring the Fibre Channel for TCP/IP

NOTE: Please read the following carefully, even if you are an experienced administrator of TCP/IP networks. If you are connecting to an existing TCP/IP network, you must contact your network administrator before proceeding with TCP/IP configuration. Please review this procedure with your network administrator before performing it.

If you have connected your Profile's Ethernet connection to an existing TCP/IP network, skip to the *Configuring Fibre Channel for an Existing Net* procedure below.

If you have not connected your Profile's Ethernet connection to an existing network, proceed with the following.

Configuring Fibre Channel for a Stand Alone Network

NOTE: Ensure that you have correctly installed each Profile before doing this Fibre Channel configuration. If you add another node to the Fibre Channel network at a later date, you will need to repeat this step for all nodes on the net.

1. Start all the systems on the Fibre Channel Network.
2. From a command prompt, type **makehost** and press Return.
3. After you have run *makehost* on all systems, reboot all systems.
4. Perform the *Installation Verification* procedure in Chapter 3.

Configuring Fibre Channel for an Existing Network

All Profile name resolution is performed by Windows NT. Therefore, as with the rest of your TCP/IP installation, all node names will need to be managed in host files or a DNS server. Profile software v2.1 (and higher) requires that:

- Fibre Channel TCP/IP names must be the Ethernet TCP/IP names with a **_fc0** suffix. For example, if a Profile system name is **Profile1**, the Fibre Channel TCP/IP for that Profile must be **Profile1_fc0**.
- All Fibre Channel IP addresses use a hard-coded netmask of 255.255.255.0 and you must assign IP addresses accordingly.

After configuring all machines, verify name resolution using ping by typing:

```
ping Profile1_fc0<RETURN>
```

If this returns:

```
Pinging Profile1_fc0 [128.181.1.1]
```

you have successfully resolved the name **Profile1_fc0** to the address **128.181.1.1**

Don't worry about whether the ping was successful. Keep in mind that although this verifies name resolution, it does not test Fibre Channel connectivity.

If the above ping returns:

```
Bad IP Address Profile1_fc0
```

the Fibre Channel IP is not resolved. (You may want to reboot to ensure changes take effect, or check your spelling, etc.)

Testing Your Fibre Channel Network

After all Profiles have been rebooted, ensure that the PortServer program is running on all Profiles within the Fibre Channel network. Tektronix recommends that this icon be copied to the Start-up group so that it will be started automatically.

Basic Fibre Channel communication can be verified with the **fcping** command. Start a command prompt window and type: **fcping profilex_fc0** where **x** is the name of the remote Profile. For example, to verify Fibre Channel connectivity to Profile3 you would type: **fcping profile3_fc0**. This command should return a positive result. If not, perform System Board Diagnostics in Chapter 3.

Using Fibre Channel

The **listnames** utility is provided to enumerate PdrMovies on a remote Profile. This utility will list components of PdrMovies, based on a starting argument parameter. This parameter specifies a valid PdrMovie component. Valid components are datasets, groups or movies as defined in the Profile API programming guide.

NOTE: *Parameters must be entered in the order given.*

The listnames usage is:

```
listnames [-l start_arg] [-r remote_machine]
-l list names based on start_arg
-r remote_machine (local if not specified)
```

Examples:

```
listnames -r Profile5
```

This will list all valid datasets on Profile5.

```
listnames -r Profile5 -l INT:
```

This will list all groups in the INT: dataset on Profile5.

```
listnames -r Profile5 -l INT:/default/
```

This will list all movies in the INT:/default group on Profile5.

NOTE: *If the -r parameter is not specified, the utility will run on the local Profile. If the -l parameter is not specified, the utility will list all valid datasets. Dataset names are case sensitive. That means that INT: and int: would be considered different datasets.*

The **copymovie** movie utility copies a PdrMovie between two Profiles using the fibre channel network. You will need clips to perform this utility. The copymovie usage is:

```
copymovie srcMachine srcName destMachine destName
```

The local machine can be referred to as *.

Examples:

```
copymovie Profile3 INT:/default/movie1 Profile4 INT:/default/movie2
```

This will copy a movie called **INT:/default/movie1** from Profile3 to Profile4, where it will be named **INT:/default/movie2**.)

```
copymovie Profile1 INT:/default/movie1 * INT:/default/movie7
```

This will copy a movie called **INT:/default/movie1** from Profile1 to the local Profile where the command was run, where it will be named **INT:/default/movie7**.)

Appendix **A**

Specifications

This appendix consists of tables of the electrical and physical specifications and environmental criteria for the PDR200.

Definition of Terms Used in Tables

The following terms apply to the PDR200 as they appear in the following tables.

Specification - A document or a section of a document that lists and describes characteristics and performance requirements of equipment and certain program material.

REQUIREMENT: (Performance Requirement) - A statement that defines a characteristic, usually in limit form.

SUPPLEMENTAL DATA: - Statements that explain performance requirements or provide performance information. These are not considered to be statements of guaranteed performance and are not ordinarily supported by a performance check procedure.

Electrical Specifications

Table A-1. Power Source

Characteristics	Description
Electrical Rating	<i>Requirement:</i> 100 -240V, 50/60 Hz, 10A maximum
Supply Type	<i>Supplemental Data:</i> Single Phase
Supply Connection	<i>Supplemental Data:</i> Detachable cord set
Power Consumption	<i>Supplemental Data:</i> <1000 VA

Mechanical Specifications

Table A-2. Mechanical Specifications

Characteristic	Description
Dimensions	<i>Requirement:</i> PDR 200 (all) Height: 8.750 inches (22.225 centimeters) Width: 19.000 inches (48.260 centimeters) Depth: 23.500 inches (59.690 centimeters)
Weight	<i>Requirement:</i> PDR 200 ¹ Net: 70 pounds (31.751 kilograms) Shipping: 85 pounds (38.555 kilograms)

¹ A fully optioned PDR 200.

Environmental Criteria

Table A-3. Environmental Criteria

Characteristics	Description
Ambient Temperature	
Operating	<i>Requirement:</i> 10° to 40°C (+50° to 104°F)
Non-operating	<i>Requirement:</i> -40° to 65°C (-40° to 140°F)
Temperature Gradient	
Operating	<i>Requirement:</i> 20°C/hr (36°F/hr) maximum without condensation
Non-operating	<i>Requirement:</i> 20°C/hr (36°F/hr) maximum without condensation
Wet Bulb Temperature	
Operating	<i>Requirement:</i> 29.4°C (85°F) maximum
Non-operating	<i>Requirement:</i> 36.0°C (96.8°F) maximum
Altitude	
Operating	<i>Requirement:</i> 10,000 feet (3049 meters) @ 2,000 ft/minute (610 meters/minute)
Non-operating	<i>Requirement:</i> 40,000 feet (12,195 meters) @ 2,000 ft/minute (610 meters/minute)
Relative Humidity	
Operating	<i>Requirement:</i> 8% to 90% non-condensing (10%/hr maximum)
Non-operating	<i>Requirement:</i> 8% to 90% non-condensing (10%/hr maximum)
Mechanical Shock	<i>Requirement:</i> 20 Gs 11msec (Non-Operating Only)
Bench Handling	<i>Requirement:</i> Per Tektronix Standard 062-2858-00, Rev B, Class T8 over 35 lbs (15.84KGs), 2 inch drop
Transportation	<i>Requirement:</i> Per Tektronix Standard 062-2858-00, Rev B

Appendix **B**

Connector Pin-outs

This appendix contains the pin-outs for the connectors at the rear panel of the PDR200

S-VGA Board Connectors

The S-VGA board has two rear panel connectors: one for the Monitor and one for a Parallel Port. The SVGA board communicates over the ISA bus. The S-VGA board rear panel Monitor connector is a high density 15 female connector. Figure B-1 shows the SVGA Monitor connector and pin-outs.

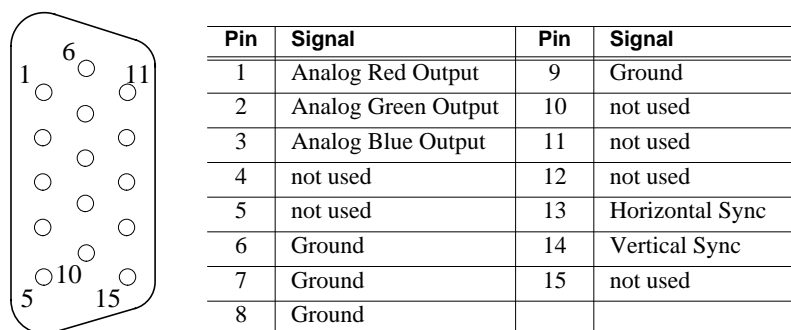


Figure B-1. SVGA Board Monitor Connector and Pin-outs

Table B-1 lists the pin-outs for the Parallel Port connector on the S-VGA board.

Table B-1. SVGA Board Parallel Port Connector Pin-outs

Pin	Signal
1	STROBE/
2	PD(0)
3	PD(1)
4	PD(2)
5	PD(3)
6	PD(4)
7	PD(5)
8	PD(6)
9	PD(7)
10	ACK
11	BUSY
12	PAPER ERROR
13	SLCT
14	AUTO FEED
15	ERROR
16	INIT
17	SLCTIN/
18	GND
19	GND
20	GND
21	GND
22	GND
23	GND
24	GND
25	GND

Local Area Network (LAN) Board Connectors

The LAN board has two connectors for 10/100 BaseT format. The connector used with the Profile is the 8-pin RJ-45 snap-in telephone-type connector which supports Category 5 unshielded twisted pairs. Figure B-2 shows the RJ-45 connector and pin-outs.

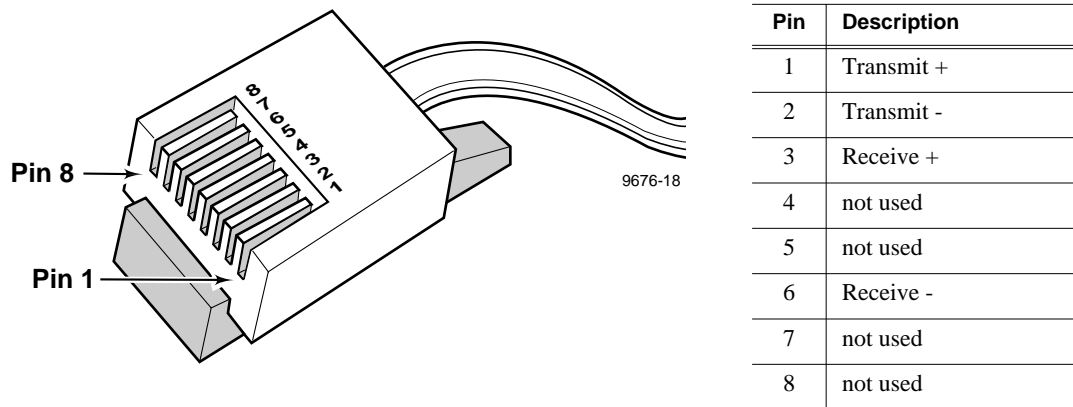


Figure B-2. LAN RJ-45 Connector and Pin-outs

Table B-2 lists the pin-outs for the LAN board 9-pin DIN connector.

Table B-2. LAN 9-Pin Connector Pin-outs

Pin	Signal
1	Receive +
2	not used
3	not used
4	not used
5	Transmit +
6	Receive -
7	not used
8	not used
9	Transmit -

SCSI-2 Connector

The PDR200 provides a number of SCSI-2 68-pin interface connectors at the rear panel, including the one on the SCSI board which is reserved for the PLS 200 Library System.

For a 2-channel Profile, SCSI interfaces are identified as:

SCSI A - Master EDR board rear panel connector

SCSI B - Rear Panel connector

For a 4-channel Profile, SCSI interfaces are identified as:

SCSI A - Master EDR board rear panel connector

SCSI B - Rear Panel connector

SCSI C - Slave EDR board rear panel connector

SCSI D - Rear Panel connector

All SCSI-2 connectors have the same pin-outs. This includes an internal SCSI-2 interface that is used with the disk drives that are resident within the PDR 200. Figure B-3 shows a SCSI connector and the pin-outs.

Note that in Figure B-3, signals preceded by a dash (-) indicate signals that are true, asserted, and active when low.



Pin #	Mnemonic	Signal Description	Pin #	Mnemonic	Signal Description
1	DB12	Data Bus bit 12	35	-DB12	Data Bus bit 12
2	DB13	Data Bus bit 13	36	-DB13	Data Bus bit 13
3	DB14	Data Bus bit 14	37	-DB14	Data Bus bit 14
4	DB15	Data Bus bit 15	38	-DB15	Data Bus bit 15
5	DB P1	Data Bus Parity (8-15)	39	-DB P1	Data Bus Parity (8-15)
6	GND	Signal Ground	40	GND	Signal Ground
7	DB0	Data Bus bit 0	41	-DB0	Data Bus bit 0
8	DB1	Data Bus bit 1	42	-DB1	Data Bus bit 1
9	DB2	Data Bus bit 2	43	-DB2	Data Bus bit 2
10	DB3	Data Bus bit 3	44	-DB3	Data Bus bit 3
11	DB4	Data Bus bit 4	45	-DB4	Data Bus bit 4
12	DB5	Data Bus bit 5	46	-DB5	Data Bus bit 5
13	DB6	Data Bus bit 6	47	-DB6	Data Bus bit 6
14	DB7	Data Bus bit 7	48	-DB7	Data Bus bit 7
15	DB P	Data Bus Parity (0-7)	49	-DB P	Data Bus Parity (0-7)
16	DIFFSENS	Differential (Drive) Sensor	50	GND	Signal Ground
17	TERMPWR	Termination Power	51	TERMPWR	Termination Power
18	TERMPWR	Termination Power	52	TERMPWR	Termination Power
19	Reserved	n.a.	53	Reserved	n.a.
20	ATN	Attention	54	-ATN	Attention
21	GND	Signal Ground	55	GND	Signal Ground
22	BSY	SCSI Bus Busy	56	-BSY	SCSI Bus Busy
23	ACK	Data Xfer Acknowledge	57	-ACK	Data Xfer Acknowledge
24	RST	Reset	58	-RST	Reset
25	MSG	Message	59	-MSG	Message
26	SEL	Select	60	-SEL	Select
27	C/D	(Control)Data	61	-C/D	Control(Data)
28	REQ	Data Xfer Request	62	-REQ	Data Xfer Request
29	I/O	Input/Output	63	-I/O	Input/Output
30	GND	Signal Ground	64	GND	Signal Ground
31	DB8	Data Bus bit 8	65	-DB8	Data Bus bit 8
32	DB9	Data Bus bit 9	66	-DB9	Data Bus bit 9
33	DB10	Data Bus bit 10	67	-DB10	Data Bus bit 10
34	DB11	Data Bus bit 11	68	-DB11	Data Bus bit 11

Figure B-3. SCSI Connector and Pin-outs

Fibre Channel Connector

The Fibre Channel board uses a 9-pin subminiature D-type connector. Figure B-4 shows the connector and a table of the pin-outs.

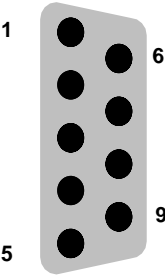
	Pin	Mnemonic	Description
	1	T _{x+}	Differential Transmit Data IN
	2	V _{cc}	5VDC (nominal)
	3	Fault	Module Fault Detect
	4	KEY	Mechanical Key position
	5	R _{x+}	Differential Receive Data OUT
	6	T _{x-}	Differential Receive Data IN
	7	ODIS+	Optical Output Disable
	8	GND	Signal Ground
	9	R _{x-}	Differential Receive Data OUT

Figure B-4. Fibre Channel Connector and Pin-outs

Fibre Channel Cable Specifications

Both copper wire and fiber cable specifications are given.

Copper wire:

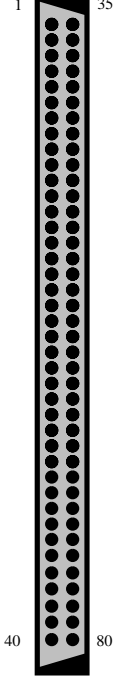
Cable type: 150 ohm twinax copper wire
 Maximum length: 30 meters (98 feet) (GLM dependent)
 Connector type: DB9

Fiber:

Cable type: duplex zip cord, plenum grade
 Fiber: 50/125
 Maximum length: 1.2 kilometers (3,937 feet) (GLM dependent)
 Connector type: SC Duplex Polish PC

Audio Signal Processing Board Connector

The Audio digital Signal Processor board (ASPB) accepts 16 channels of digital audio input and provides 16 channels of digital audio output via a 80-pin connector on the rear panel. The cable to this connector is from the Profile Audio Chassis or from the XLR/BNC 216 Digital Breakout Box. Figure B-5 shows the ASPB rear panel connector and lists the connector pin-outs.



Pin	Signal Description	Pin	Signal Description	Pin	Signal Description
1	Ch 1-2 AES Out (P)	28	nc	55	Ch 15-16 AES Out (P)
2	Ch 1-2 AES Out (N)	29	Ch 13-14 AES in (P)	56	Ch 15-16 AES Out (N)
3	Chassis Ground	30	Ch 13-14 AES Out (N)	57	Ch 1-4 ADC Clock Out (P)
4	Chassis Ground	31	AES Reference In (P)	58	Ch 1-4 ADC Clock Out (N)
5	Ch 5-6 AES Out (P)	32	AES Reference In (N)	59	Ch 3-4 AES In (P)
6	Ch 5-6 AES Out (N)	33	AES Monitor Out (P)	60	Ch 3-4 AES In (N)
7	nc	34	AES Monitor Out (N)	61	Ch 5-8 ADC Clock Out (P)
8	nc	35	nc	62	Ch 5-8 ADC Clock Out (N)
9	Ch 9-10 AES Out (P)	36	nc	63	Ch 7-8 AES In (P)
10	Ch 9-10 AES Out (N)	37	UART Receive (P)	64	Ch 7-8 AES In (N)
11	nc	38	UART Receive (N)	65	Ch 9-12 ADC Clock Out (P)
12	nc	39	PAC Ready (P)	66	Ch 9-12 ADC Clock Out (N)
13	Ch 13-14 AES Out (P)	40	PAC Ready (N)	67	Ch 11-12 AES In (P)
14	Ch 13-14 AES Out (N)	41	nc	68	Ch 11-12 AES In (N)
15	nc	42	nc	69	Ch 13-16 ADC Clock Out (P)
16	nc	43	Ch 3-4 AES Out (P)	70	Ch 13-16 ADC Clock Out (N)
17	Ch 1-2 AES In (P)	44	Ch 3-4 AES Out (N)	71	Ch 15-16 AES In (P)
18	Ch 1-2 AES In (N)	45	nc	72	Ch 15-16 AES In (N)
19	nc	46	nc	73	Digital Ground
20	nc	47	Ch 7-8 AES Out (P)	74	Breakout Box Present Flag
21	Ch 5-6 AES In (P)	48	Ch 7-8 AES Out (N)	75	UART Transmit (P)
22	Ch 5-6 AES In (N)	49	nc	76	UART Transmit (N)
23	nc	50	nc	77	Chassis Ground
24	nc	51	Ch 11-12 AES Out (P)	78	Chassis Ground
25	Ch 9-10 AES In (P)	52	Ch 11-12 AES Out (N)	79	PAC Reset (P)
26	Ch 9-10 AES In (N)	53	nc	80	PAC Reset (N)
27	nc	54	nc		

nc = not connected; P = Positive half of Differential signal; N = Negative half of Differential signal.

Figure B-5. ASPB Connector and Pin-outs

Reference Genlock D-Connector

The 25-pin D connector on the Reference Genlock board provides eight Longitudinal Time Code (LTC) interfaces (four input channels and four output channels). The LTC Breakout cable with a DB25 connector on one end and eight XLR connectors on the other can then be connected to the Reference Genlock 25-pin D connector at the rear panel of the Profile. Figure B-6 shows the connector and pin-outs.

Pin	Description	Pin	Description
1	Ch 0 Input +	14	Ch 0 Output Common
2	Ch 0 Input -	15	Ch 0 Output +
3	Ch 0 Input Common	16	Ch 0 Output -
4	Ch 1 Input +	17	Ch 1 Output Common
5	Ch 1 Input -	18	Ch 1 Output +
6	Ch 1 Input Common	19	Ch 1 Output -
7	Ch 2 Input +	20	Ch 2 Output Common
8	Ch 2 Input -	21	Ch 2 Output +
9	Ch 2 Input Common	22	Ch 2 Output -
10	Ch 3 Input +	23	Ch 3 Output Common
11	Ch 3 Input -	24	Ch 3 Output +
12	Ch 3 Input Common	25	Ch 3 Output -
13	Power On Indicator		

Figure B-6. Reference Genlock 25-pin Connector and Pin-outs

RS-232 Connectors

The PDR200 has two RS-232 interface connectors on the rear panel. Figure B-7 shows a 9-pin RS-232 rear panel connector (both are male) and pin-outs.

Pin	Signal	Description
1	DCD	Received Line Signal Detector
2	RXD	Received Data
3	TXD	Transmitted Data
4	DTR	Data Terminal Ready
5	GND	Ground
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	CE	Ring Detect

Figure B-7. RS-232 Connector Pin-outs

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